University of Alberta

Parents' Reflective Function and Caregiving Representation: Implications for Attachment Theory and Intervention

By

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ABSTRACT

My dissertation focuses on reflective function, a parental cognition associated with infant attachment security. I developed a theoretical model that situates reflective function (i.e., understanding of the mental states underlying behaviors) within an ecological framework. The model links reflective function to infant attachment security through parents' caregiving representation (i.e., cognitions about children and parenting). To examine the relationship between parents' reflective function and caregiving representation I conducted 2 related studies. In the first study I evaluated an enhanced prenatal education program, which aimed to develop the reflective function of expectant mothers and fathers. A pilot of the enhanced program was conducted with 28 expectant parents at 3 sites within the Capital Health Region in the City of Edmonton. Paired sample t-tests showed that the reflective function of participants with low pre-program reflective function (n=9) increased significantly. A key finding was that participants with high pre-program reflective function (n=16) and those who changed from low to high reflective function (n=5) made positive changes in their attitudes toward children and parenting at the end of the 5-week program. And there were statistically significant changes overall in participants' self-reported understanding of 5 topics targeted by the enhanced program: *infant emotions, infant attachment, childhood emotions, parents' emotions and parents' behavior.* The results suggest that short-term enhancements to prenatal education have the potential to

be effective in developing the cognitions of expectant parents that are associated with *secure* infant attachment.

In the second study, which employed multivariate analyses, no relationship was found between 71 expectant parents' reflective function and 5 cognitions about children and parenting associated with secure infant attachment: *appropriate expectations of children, empathy for children's perspectives, values alternatives to corporal punishment, supports appropriate family roles,* and *respects children's independence.* The combined results of the 2 studies indicate that although the level of parents' reflective function is not correlated with their cognitions about children and parenting, it predicts *change* in those cognitions after participation in an intervention. An implication of my research is that it may be worthwhile to include a component to develop parents' reflective function in interventions targeting parents' cognitions and behaviors.

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CHAPTER 1

INTRODUCTION

My dissertation focuses on reflective function, which is a parental cognition associated with infant attachment security (Fonagy, Steele, Steele, Moran & Higgitt, 1991). In this thesis, I use a *manuscript format* to present my research. Chapter 1 provides the background to my research, includes an overview of attachment theory and research, describes my research purpose and objectives, and introduces the remainder of the thesis. Chapters 2, 3 and 4 contain 3 yet-to-be published manuscripts describing my theoretical framework (Chapter 2) and empirical research (Chapters 3 and 4). In the final chapter (Chapter 5), I provide a general discussion of the research findings, describe implications for the development of the theoretical model presented in Chapter 2, and offer concluding comments.

Background

I have long been interested in the relationship between parents' cognitions and their parenting. As a speech-language pathologist I worked with families of infants and preschoolers who had significant developmental delays. In this role, I helped parents develop realistic expectations for their children, and demonstrated how to stimulate speech and language development in the home setting. I observed that parents' ability to change how they interacted with their children was related not only to increased knowledge of child development and behavioral strategies, but also to parents' ability to understand and to separate their own needs and emotions from those of their children. Parents with greater

self-understanding seemed to make the most change in their ability to stimulate language development, and to manage their children's behavior.

When I began my doctoral studies in September 2000, I sought to explore the relationship between parents' self-understanding and parent-child interaction that I had observed as a clinician, as a parent, and as a community member. To that end, I studied family theory and reviewed family development literature, with a specific focus on parents' cognitions and behaviors. I reviewed cognitive theories, such as Attribution Theory (Miller, 1995) and Newberger's Parent Awareness typology (Newberger, 1980), which describe the relationship between parents' reasoning about their children's behavior and parent-child interactions. Although some studies have provided evidence that parents' attributional patterns and Parent Awareness categories are associated with parent-child interaction and child development outcomes, the relationships are not strong or consistent (McGillicuddy-Delisi & Sigel, 1995; Miller, 1995; Newberger & Cook, 1983). In contrast, research based on attachment theory has demonstrated a moderate to strong relationship among parents' cognitions, parent-child interaction and infant attachment outcomes. Of particular interest to me is the strength of the association between expectant parents' reflective function, a cognition defined as the *"capacity to reason about one's own and other's behavior in terms of mental states"* (Fonagy, Target, Steele & Steele, 1998, p. 7), and infant attachment security (Fonagy, Steele, Steele, Moran & Higgitt, 1991). Fonagy et al.'s description of reflective function was most conceptually consistent with my clinical observations of parents' self-understanding, and therefore I

focused on parents' reflective function for my dissertation. Because the concept of reflective function is rooted in attachment theory, in the next section I provide an overview of attachment theory and research.

Attachment Theory and Research

Since the 1960s, an attachment theoretical framework has been the basis of a large body of research on infant and child development. This research has explored 3 primary areas: importance of infant attachment for children's later social, emotional and cognitive development, incidence of infant attachment security and insecurity, and, determinants of infant attachment security. Research on the determinants of infant attachment security has focused primarily on parents' interactions with the infant, and how parents' cognitive processes affect these interactions. To provide a context for my research on reflective function I summarize the literature in these 3 major areas.

Importance of Infant Attachment

John Bowlby, the originator of attachment theory, proposed that patterns of early parent-child interaction would predict later socio-emotional development (Bowlby, 1969/82). Using evidence from ethological studies, Bowlby argued that infants are born with a species-typical attachment behavioral system designed to elicit protection from caregivers. He observed that an infant's behavioral system consists of proximity-seeking behaviors and signals (e.g., clinging, crying) in response to threats to safety and security, and that the responses of the caregiver to the infant's attachment signals constitute a transactional pattern. For example, if a parent usually responds to the baby's crying by picking the baby up,

this is a predictable transactional pattern. Bowlby proposed that transactional patterns established in the first year of life become internalized as 'inner working models' of self and others in relationships. He defined inner working models as *"dynamic representations with cognitive and affective components"* (Bowlby, as quoted in Bretherton, 1993, p. 281). Bowlby hypothesized that these inner working models become templates for all relationships and predict later socio-emotional development.

A large body of research documenting the long-term effects of patterns of early parent-child interaction supports Bowlby's original hypothesis (for reviews see Thompson, 1999; Weinfield, Sroufe, Egeland & Carlson, 1999). And, recent longitudinal research confirms that *securely attached* infants (i.e., use their parent as a secure base from which to explore and are comforted by the parent when distressed) grow up to be more socially competent and emotionally healthy than infants who are *insecurely* attached. For example, McElwain, Cox, Burchinal, and Macfie (2003) found that an *insecure* attachment history was related to poor quality play and poor social interactions of 36-month-old children. Stams, Juffer, and van IJzendoorn (2002), in a study of 146 internationally adopted children who were placed before 6 months of age, found that infant attachment security predicted better socio-emotional and cognitive developmental outcomes at 7 years of age. And, Aviezer, Sagi, Resnick, and Gini (2002) found that young adolescents who were *securely* attached to their mother in infancy received higher scores on measurements of scholastic abilities (i.e., teacher ratings of curiosity and verbal abilities) and on measurements of

emotional maturity (i.e., teacher ratings of students' ability to work independently and to cope with frustration) than adolescents who were *insecurely* attached as infants.

Although these 3 studies, like much of the longitudinal research, have examined the long-term effects of infant-mother attachment, a growing body of research illustrates that infant-father attachment is also important. For example, Verschueren and Marcoen (1999) found that infants who were *securely* attached to both parents had better developmental outcomes at age 5 than children who were *insecurely* attached to 1 or both parents, and that both mother-infant attachment and father-infant attachment predicted independent aspects of kindergarten children's socio-emotional development.

Overall, a significant body of literature highlights the importance of *secure* infant attachment for later social, emotional and academic success. Given this well-documented association, the relatively high incidence of *insecure* infant attachment (i.e., 35-40%) has been a source of concern for researchers. Research on the incidence of infant attachment outcomes is described in the next section.

Incidence of Infant Attachment Outcomes

Much of what we know about the incidence of *secure* and *insecure* infant attachment outcomes is based on a measurement developed by Ainsworth, Blehar, Waters, and Wall (1978), who documented different patterns of parent-child interaction during extensive home observations with 23 mother-infant dyads. In addition to home observations, researchers brought the dyads into a

laboratory situation and observed the infants' responses to separation from their mothers. From these original observations, Ainsworth and her colleagues developed the Strange Situation procedure, a measurement of infant attachment that comprises a series of parent-infant separations and reunions when the child is approximately 12 months of age. Ainsworth et al. identified 3 distinct patterns of infant behavior upon reunion with their mothers. *Securely* attached infants (about 60 to 65%) use the parent as a secure base from which to explore, and exhibit proximity seeking behaviors upon reunion whereas *insecurely* attached infants (35 to 40%) either avoid the parent (avoidant classification) or show combinations of resistance, anger and distress (anxious-ambivalent classification) (Ainsworth et al., 1978). A fourth *insecure* category, disorganized classification, was added later (Main & Solomon, 1986). Disorganized infants (5%) exhibit a combination of characteristics from the other 3 categories, and their responses in the Strange Situation are chaotic and often bizarre.

Numerous studies, conducted in North America and Western Europe, have confirmed Ainsworth et al.'s (1979) original findings that approximately 1 out of every 3 infants exhibit *insecure* attachment (for reviews see Hesse, 1999 and De Wolff & van IJzendoorn, 1997). Most of the research on incidence has examined infants' attachments to their mothers. However, van IJzendoorn and De Wolff (1997) completed a meta-analytic review of 14 studies that included an assessment of infant-father as well as infant-mother attachment, and reported that the overall percentage of *secure* infant-father attachment (67%; n=950) was the same as for a large set (67%; n=1584) of non-clinical infant-mother dyads

examined in an earlier meta-analytic study. Interestingly, although the incidence of infant attachment is similar for mothers and fathers, van IJzendoorn and De Wolff (1997) and recently Caldera (2004), reported only a moderate (i.e., 60%) concordance between infant-father and infant-mother attachment. As their studies were limited to an exploration of incidence, these researchers stress that further studies are needed to explore the mechanisms underlying the lack of concordance of infants' attachment to their mothers and fathers in approximately 40% of families.

The relatively high incidence of *insecure* attachment combined with empirical evidence that *insecure* infant attachment, whether to mother or father, places children at risk for later social and emotional difficulties (Aviezer et al., 2002; McElwain et al., 2003; Stams et al., 2002; Thompson, 1999; Verschueren & Marcoen, 1999; Weinfield et al., 1999) has stimulated a parallel body of research examining the determinants of infant attachment security.

Determinants of Infant Attachment

A major proposition of attachment theory that is supported by empirical research is that proximal processes, such as parent-child interaction, are the most important determinants of infant attachment. A second major proposition is that parent-child interaction is determined, in large part, by parents' cognitive processes. In this section, I first review research on parent-child interactions associated with infant attachment. Then I review literature on parents' cognitive processes, which are assumed to impact infant attachment indirectly through parent-child interactions. The impact of other proximal processes on infant

attachment, such as infant temperament, and contextual processes, such as marital quality, are reviewed in Chapter 2.

Parent-Child Interactions Associated with Infant Attachment

Based on Bowlby's assertion that mothers' interaction with their infants is the primary influence on attachment outcomes, Ainsworth and her colleagues (1976, 1978) developed four 9-point scales to measure aspects of mothers' interactive behavior. The scales included: *sensitivity-insensitivity to the baby's signals and communications*; *acceptance-rejection; cooperation-interference;* and, *accessibility-ignoring*. Two decades of research using variations of Ainsworth et al.'s original scales has revealed that mothers' sensitivity, defined as the "*ability to perceive the infant's signals accurately, and the ability to respond to these signals promptly and appropriately*" (De Wolff & van IJzendoorn, 1997, p. 573) is moderately correlated with infant attachment and accounts for approximately one-third of the variance in infant attachment outcomes (for a meta-analytic review see De Wolff & van IJzendoorn, 1997).

Given Bowlby's assertion that the primary caregiver would have the greatest influence on infant attachment, it is not surprising that most of the research on parents' sensitivity has focused on mothers. However, a small but growing body of literature has examined the relationship between fathers' sensitivity and infant attachment. Based on their meta-analytic review of 14 studies, van IJzendoorn and De Wolff (1997) found that fathers' sensitivity did predict father-infant attachment, but that the correlation (r =.20) was somewhat

smaller than the correlation between mothers' sensitivity and mother-infant attachment (r =.24). They concluded that:

> ...fathers do shape their infant's attachment, but to a lesser extent than mothers. The modest association between paternal sensitivity and infant-father attachment suggests that in the case of fathers as well as mothers the transmission mechanisms are largely unknown" (p. 607).

Overall, studies of parents' sensitivity provide support for Bowlby's original assertion that parents' interaction with their infant would predict attachment outcomes, but the modest associations suggest that there are other factors besides parents' sensitivity that contribute to infant attachment outcomes (Bakersman-Kranenburg, van IJzendoorn, & Juffer, 2003; De Wolff & van IJzendoorn, 1997; van IJzendoorn & De Wolff, 1997; van IJzendoorn, Juffer, & Duyvesteyn, 1995). One such factor is parents' cognitive processes, which have been more strongly associated with infant attachment outcomes than measures of parents' sensitivity (van IJzendoorn, 1995). Literature on parents' cognitive processes associated with infant attachment outcomes is reviewed in the next section.

Parents' Cognitive Processes Associated with Infant Attachment

Most of the research on parents' cognitions associated with infant attachment has involved the study of patterns of thought rather than individual attitudes about parenting and children. Therefore, in the remainder of this thesis, the terms 'cognitive processes' and 'cognitions' will be used interchangeably to refer to parents' patterns of thinking.

Research has focused primarily on 2 cognitive processes of parents that are associated with infant attachment: parents' psychological functioning (i.e., self-esteem, depression) and parents' attachment representations (i.e., cognitions about their relationship with their own parents) (Belsky, 1999). As mentioned earlier, my own research focuses on reflective function, which is an aspect of adult attachment representation correlated with *secure* infant attachment outcomes (Fonagy, Steele, Steele, Moran, & Higgitt, 1991). To provide a context for my research, I first summarize the literature about adult attachment representation. Then I discuss reflective function and its proposed relationship to infant attachment through parents' caregiving representation (i.e., cognitions about children and parenting).

Adult Attachment Representation. Adult attachment representation refers to an adult's current 'state of mind' or 'inner working model' with respect to his or her own attachment experiences (Hesse, 1999). Informal observations by Mary Main, a student of Ainsworth, led to the discovery of a relationship between parents' narratives about their family of origin and the attachment classification of their infant. To study attachment representation, Main and Goldwyn (1984a) developed the Adult Attachment Interview (AAI), a semi-structured, hour-long protocol consisting of 18 questions about participants' relationships with their own parents. AAI interviews are classified into 1 of 4 attachment categories that identify 'state of mind' with respect to attachment: *secure, insecure-avoidant, insecure-preoccupied, insecure-unresolved*. Adults with a *secure* classification demonstrate coherent, collaborative discourse style, and provide a description of

childhood experiences that are objective and consistent, whether those experiences were favorable or unfavorable. Adults classified as *dismissing* are reluctant to speak about childhood experiences and provide incoherent narratives, that is, characterizations of childhood relationships as non-problematic are contradicted frequently with anecdotes about conflicts. Adults with a *preoccupied* classification typically demonstrate incoherence in narratives, are preoccupied with childhood relationships, and produce long emotional, grammatically entangled sentences when talking about family of origin experiences. Characteristics of adults with an *unresolved* classification include lapses in monitoring of discourse and obvious gaps in reasoning.

Main, Kaplan, and Cassidy (1985) investigated the relationship between infant attachment, using the Strange Situation procedure, and adult attachment representation, using the Adult Attachment Interview (AAI). The infant attachment classifications of 32 children were compared with their mothers' and fathers' AAI representation classifications (secure/autonomous, dismissing and preoccupied). Infant attachment classification corresponded with adult attachment classification (e.g., secure adult-secure infant, dismissing adult-avoidant infant, preoccupied adult-anxious-ambivalent infant) 75% of the time, with somewhat lower correspondence rates for fathers than for mothers. The high level of correspondence between parents' adult attachment classification and infants' attachment classification that was evident in Main et al.'s original study has been observed in several studies since that time (for reviews see Hesse, 1999 and van IJzendoorn, 1995). As in other attachment research, mothers have been the

primary focus of this body of research. However, van IJzendoorn and De Wolff (1997) completed a meta-analytic review of 14 studies that examined the relationship between mothers' and fathers' AAIs and their infants' attachment classifications. They reported correlation coefficients of r =.50 for maternal attachment representation and infant-mother attachment and r =.37 for paternal attachment representation and infant-father attachment. These moderate correlations are higher than the correlations between parents' sensitivity and infant attachment, as discussed in the previous section, and provide evidence of the intergenerational transmission of attachment for both mothers and fathers (van IJzendoorn & De Wolff, 1997).

Based on the correspondence between parents' adult attachment representation and infant attachment, researchers have developed interventions to facilitate *secure* adult attachment representation in parents of infants (for an example see Erickson, Korfmacher, & Egeland, 1992), but the program goals and learning strategies vary considerably (Lieberman & Zeanah, 1999) and the effects of the interventions on infant attachment are unclear (van IJzendoorn, Juffer, & Duyvesteyn, 1995). These findings led Fonagy (1999) to propose that "*attachment security is best considered a dimensional rather than a categorical construct*" (p. 618), with the implication that interventions should focus on developing continuous qualities of parents' *secure* adult attachment representation. The 32 scales that are used to distinguish between the 4 AAI attachment classification categories measure continuous constructs underlying each category. The 3 scales that measure the underlying continuous constructs

of a *secure* adult attachment category include *metacognitive monitoring, coherence of transcript,* and *reflective function* (Hesse, 1999). The *coherence of transcript* scale is used to rate a subject's flow of speech, including ease of conversation and consistency of narrative. This scale recognizes that *how* a speaker talks about family of origin experiences is more important than *what* he or she says. The *metacognitive monitoring* scale rates the ability of a speaker to identify inconsistencies or contradictions in his or her narrative. A high level of *metacognitive monitoring* is characterized by comments that indicate a speaker is aware of and monitors his or her thoughts. The *reflective function* scale is currently being tested and modified, and has not formally been added to the AAI protocol (Hesse, 1999). My decision to focus on reflective function is due to Fonagy et al.'s finding that *reflective function* is a stronger predictor of secure infant attachment than *coherence of transcript* or *metacognitive monitoring*, and their argument that these 2 concepts may actually be encompassed by reflective function. Their findings are described in the next section.

Reflective Function. Fonagy et al. (1998) define reflective function as the *"capacity to reason about one's own and other's behavior in terms of mental states"* (p.7). The term 'mental states' refers to feelings, beliefs, intentions, and desires. In 1991, Fonagy and his colleagues rated the reflective function of 100 expectant mothers and 100 expectant fathers, based on participants' responses to the AAI interview questions (Fonagy et al., 1991). A low rating was given to subjects who were unwilling or unable to reflect on the mental states underlying their own childhood behaviors, or those of their parents. These subjects used

platitudes, generalizations or banal statements to describe the motivations underlying their parents' or their own behaviors. High ratings were given to subjects who seemed able to both understand and separate the psychological states, motivations and emotions underlying their behavior as children from the states, motivations and emotions underlying their parents' behavior. Results demonstrated a moderately strong correspondence between the reflective function of expectant parents and subsequent infant attachment (r= .51 and .36 for mothers and fathers respectively). Expectant parents with a high level of reflective function were more likely than parents with a low level of reflective function to have *securely* attached infants. A major implication of this research is that parenting programs that aim to increase the incidence of *secure* infant attachment should target the reflective function of expectant parents. However, we do not yet fully understand the mechanisms underlying the association between reflective function and infant attachment, and this understanding will be important for the development of interventions.

Fonagy et al. (1991) proposed that parents' reflective function impacts infant attachment through parents' cognitions about infant mental states, which in turn influences parents' sensitivity. They hypothesized that the ability to reflect upon one's own mental states, and to make the connection between mental states and behaviors is a prerequisite to parents' ability to understand the mental states that underlie their own infants' behaviors. Fonagy et al. went on to propose that parents need to have "*an awareness of the infant as a psychological entity with mental experience*" (p.207) before they can provide sensitive care to their

infant. The implication of this proposal is that parents' ability to understand their infant's mental states precedes their ability to respond sensitively.

Fonagy et al.'s (1991) proposed relationships among reflective function, parents' cognitions about infant's mental states or perspectives, and parents' ability to respond sensitively to their infant's needs have not yet been fully explored. However, George and Solomon (1996) and Benoit, Parker and Zeanah (1997) have explored patterns of parents' cognitions about infants, which they refer to, respectively, as caregiving representation, or internal working model of the child (IWMC). Studies exploring the relationship between caregiving representation, parents' sensitivity and infant attachment are reviewed in Chapter 2 of this thesis. To summarize, specific cognitions about children and the parenting role that have been associated with *secure* infant attachment include *empathy for children's perspectives, openness to change in parenting approaches, acceptance of the child, and positive perceptions of the child and of parenting* (Benoit et al., 1997; George & Solomon, 1996). To my knowledge, the proposed relationship between reflective function and cognitions about children and parenting associated with infant attachment security has not yet been examined, and my dissertation research addresses this gap.

My Research

Purpose

The purpose of my research was to advance theoretical and empirical understanding of the relationship of reflective function to infant attachment. First I developed a theoretical model that describes relationships among parents'

reflective function, and other interactional and contextual determinants of attachment that have been described in the literature (Belsky, 1999). My model focuses on the relationship between parents' reflective function and their cognitions toward children and parenting (i.e., caregiving representation). Then, I conducted empirical research to explore the hypothesized relationship of reflective function to cognitions toward children and parenting associated with *secure* infant attachment. Below, I provide an overview of my theoretical model and research objectives, followed by a summary of my empirical research findings.

Theoretical Model

A major criticism of attachment theory is that it focuses primarily on parent-infant interaction, and does not adequately consider the influence of other contextual processes on infant attachment. Several scholars have stressed that attachment theory would be improved by considering that parents' *sensitivity* interacts with the unique contextual characteristics of the parent-child relationship, such as economic and socio-cultural factors, to affect infant attachment (Belsky, 1997; Cowan, 1997; De Wolff, & van IJzendoorn, 1997; Thompson, 1997; van den Boom, 1997; van IJzendoorn, & De Wolff, 1997). Therefore, I situate parents' reflective function within an ecological framework based on the work of Bronfenbrenner (1979, 1994, 1995) and Belsky (1999). The resulting model, which is the focus of Chapter 2, describes the proposed relationships among parents' reflective function, and other interactional and contextual determinants of attachment that have been described in the literature

(Belsky, 1999). The major contribution of my theoretical model is that by describing how parents' reflective function is related to cognitions about children and parenting associated with *secure* infant attachment, I have provided a link between the work of Fonagy et al. (1991, 1998) and that of George and Solomon (1996, 1998) and Benoit et al. (1997). My empirical research is focused on this one aspect of the model.

Research Objectives

The main objective of my research was to examine the hypothesized relationship between reflective function and specific cognitions about children and parenting associated with *secure* infant attachment outcomes. To accomplish this objective I developed a parenting program, in conjunction with Dr. Berna Skrypnek, to develop the reflective function of expectant parents. The pilot program was developed as an enhancement to the existing 5-week prenatal classes offered by the Capital Health Authority, which provides health services to families living in the city of Edmonton and in northern Alberta. I had 2 reasons for targeting expectant parents enrolled in prenatal childbirth education classes. Cowan and Cowan (1997) argue that pregnancy constitutes a 'teachable' moment, because many expectant parents review their family of origin experiences and develop plans about how they will parent. As 65% of first-time parents in Canada attend prenatal education (Levitt, Hanvery, Avard, Chance, & Kaczorowski, 1995), these classes are an unmatched opportunity to impact parents' cognitions and behaviors. Second, given evidence that infants' attachments to both their mothers and fathers have important consequences for

later social, emotional and cognitive development (Verschueren & Marcoen, 1999), the presence of both parents in prenatal education provided me with the opportunity to include fathers.

In my original research plan I anticipated that 50 to 60 parents (25 to 30 couples) would volunteer for 4 enhanced prenatal programs offered between January and April 2004. I planned to first examine the proposed association between parents' pre-program reflective function and their cognitions about parenting and children, and then evaluate the effects of the reflective parenting program on these variables. However, the response rate was not at the anticipated level, and only 28 parents volunteered for the enhanced programs, for a response rate of 13%. The sample of 28 was deemed large enough to answer the evaluation questions, and the results are reported below as Study #1. However, I required a larger sample in order to complete multivariate analyses of the hypothesized relationship between parents' reflective function and their cognitions about children and parenting. Therefore, in addition to the 28 participants from the intervention study, I recruited 43 participants from 4 regular prenatal education classes to complete the pre-program questionnaires, for a total of 71 parents in this portion of the research. The results from the multivariate analyses are reported below as Study #2.

Research Findings

Study #1

Study 1 evaluated the short-term effects of a prenatal group-format reflective parenting program enhancement on 28 expectant parents' reflective function and cognitions about children and parenting. As hypothesized, participants did have significantly higher post-program scores on the reflective function measure and on the measure of attitudes toward children and the parenting role compared to pre-program scores. In addition, participants with lower pre-program reflective function demonstrated more change in reflective function at the end of the program than participants with higher pre-program reflective function. As a result of participating in the program participants retrospectively reported significant changes in their understanding of infant emotional development, and in their understanding of family of origin experiences. Although the results indicated that the level of pre-program reflective function predicted parents' change in attitudes over the 5-week program, there was some evidence that *changes* in reflective function were also associated with changes in attitudes about children and parenting, as hypothesized. In combination with findings about the short-term effects, the results of interviews with the 3 nurse educators and 8 participants suggested that the enhancement was an effective and feasible addition to prenatal education, with some modifications. The results of the evaluation of the pilot reflective parenting program are presented in Chapter 3.

Study #2

The major hypothesis for this study was that reflective function would be positively correlated with 5 cognitions about children and parenting associated with *secure* infant attachment: *appropriate expectations of children, empathy for children's perspectives, values alternatives to corporal punishment, supports appropriate family roles,* and *respects children's independence.* Further, I hypothesized that the relationship between reflective function and parents' cognitions would be independent of socio-demographic characteristics such as socio-economic status, age, sex, and education. The results of the multivariate analyses did not support hypotheses about the association of reflective function with parents' cognitions. However, the analyses did provide evidence that reflective function and cognitions about children and parenting are independent of socio-demographic characteristics. As well, the study provided important information about the attitudes of expectant parents toward children and parenting, which have implications for the development of prenatal education. The results of this study are reported in Chapter 4.

Chapter 5 contains a discussion of the findings of the 2 studies and describes implications of the findings for the theoretical model that is proposed in Chapter 2. The research has several implications for future research and development of interventions targeting parents' cognitive processes associated with secure infant attachment and these are also discussed in Chapter 5.

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CHAPTER 2

SITUATING REFLECTIVE FUNCTION IN A CONTEXTUAL MODEL OF THE DETERMINANTS OF ATTACHMENT

Introduction

Over the past 3 decades a large body of research has demonstrated a significant association between infant attachment, as assessed at 12 months of age, and children's subsequent social and emotional development (for reviews see Thompson, 1999; Weinfield, Sroufe, Egeland, & Carlson, 1999). The major finding of this research is that infants who exhibit *insecure* attachment (i.e., avoid the parent or show combinations of resistance, anger and distress when under stress) are at higher risk of developing social and emotional difficulties in later childhood and adolescence than are *secure* infants (i.e., use the parent as a base from which to explore a new setting, and seek proximity to their parent when under stress). The significance of infant attachment for later socio-emotional development, and the relatively high incidence (35-40%) of *insecure* attachment in North America and western Europe, have stimulated a parallel body of research examining the determinants of infant attachment security. For a review of this literature, see Belsky (1999).

Bowlby's (1969) contention that parent-child interaction is an important determinant of infant attachment, and 2 decades of research confirming this proposed relationship (for a review see De Wolff & van IJzendoorn, 1997), have resulted in a primary focus on parents' behavior (i.e., *sensitivity*) in attachment research and intervention. However, researchers who have reviewed the

effectiveness of behavioral interventions indicate that there is a *transmission gap*, in which a significant proportion of the variance in infant attachment is not accounted for by parents' *sensitivity*, as it is currently conceptualized (van IJzendoorn, Juffer, & Duyvesteyn, 1995). Based on this finding, scholars point to the need for models that explicate how parents' *sensitivity* interacts with other contextual factors to influence infant attachment (Belsky, 1997; Belsky, 1999; Cowan, 1997; De Wolff & van IJzendoorn, 1997; Thompson, 1997; van den Boom, 1997; van IJzendoorn & De Wolff, 1997). Although Belsky (1999) identified parents' cognitive processes (i.e., psychological functioning, attachment representation) as the most significant influences on parents' *sensitivity*, he stressed that these processes interact with other contextual factors, such as socio-economic status and marital quality, to influence infant attachment security. An understanding of these relationships is important for the development of attachment interventions focused on facilitating *secure* infant attachment through the development of parents' cognitions and behaviors.

A parental cognitive process that has been significantly associated with *secure* infant attachment is reflective function, defined as the "*capacity to reason about one's own and other's behavior in terms of mental states*" (Fonagy, Target, Steele and Steele, 1998, p.7). Fonagy, Steele, Steele, Moran, and Higgitt (1991) found a fairly strong correspondence between the reflective function of 200 expectant parents and subsequent infant attachment (r= .51 and .36 for mothers and fathers respectively). A major implication of their study was that attachment interventions should include a component to increase the level of parents'

reflective function, however, the mechanisms by which parents' reflective function affects infant attachment are not clear. Fonagy et al. (1991) provided some preliminary hypotheses about how reflective function affects infant attachment through parents' cognitions about children and parenting, but this has not yet been linked to research by George and Solomon (1996, 1999) and Benoit, Parker, and Zeanah (1997) exploring the relationship between parents' cognitions about their child and parenting (i.e., caregiving representation) and infant attachment. To guide future research and the development of interventions, an expanded theoretical model is needed to clarify the relationship of reflective function to parents' cognitions about children and parenting, and to specify how other contextual factors interact with reflective function to influence infant attachment.

In this paper, I situate parents' reflective function within an ecological framework that describes the relationships between and among reflective function, parents' cognitions about children and parenting, and other contextual and interactional determinants of attachment identified in the literature (Belsky, 1999). My model extends previous attachment theoretical models in 2 ways. First, my model specifies how parents' reflective function impacts infant attachment through parents' cognitions about children and parenting (i.e., caregiving representation) thereby providing a link between the work of Fonagy et al. (1991, 1998) and that of George and Solomon (1996, 1998) and Benoit et al. (1997). Second, by focusing on contextual processes associated with *secure* infant attachment, my model provides a framework for the development of parent

interventions that aim to facilitate *secure* infant attachment. The model has several implications for the development of attachment research and interventions.

My Theoretical Model

A major human ecological principle guiding the development of my model is that outcomes are influenced by interrelationships among the multiple environments or contexts in which an individual develops (Sontag & Bubolz, 1988). In Figure 2.1, I use a human ecological framework to describe the relationship of parents' reflective function (shown in the highlighted box) to other contextual processes, including *far distal*, *near distal*, *proximal* and *internal*, associated with the *outcome* 'infant attachment security'. In this section, I define the *outcome* and *contextual processes* depicted in the boxes in Figure 2.1. The remainder of this paper describes the relationships depicted by the arrows.

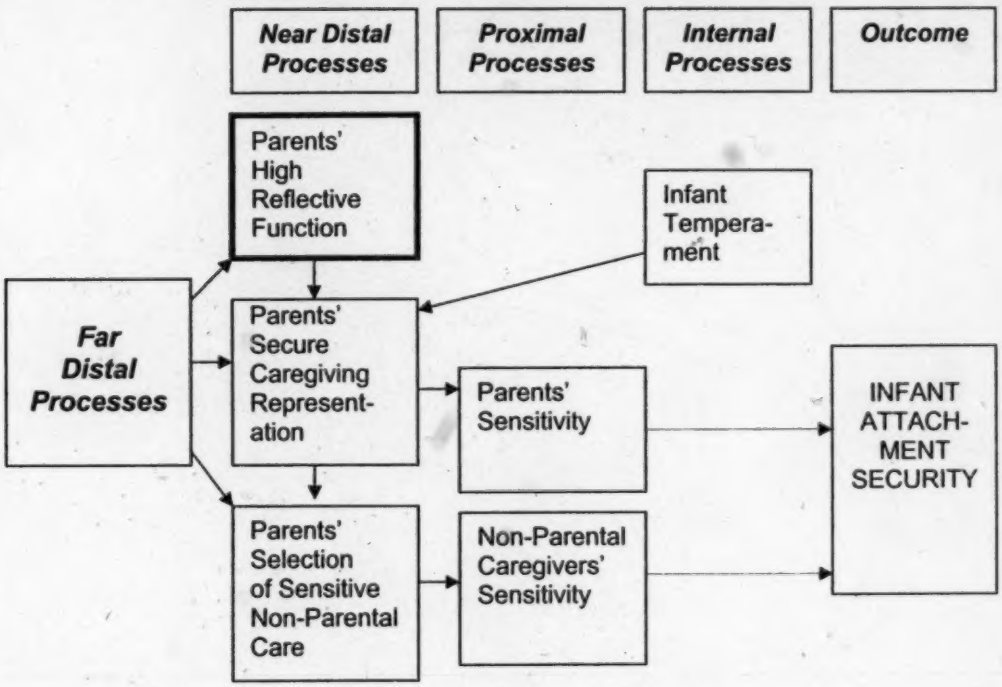

Figure 2.1. Proposed relationship of parents' reflective function to contextual processes associated with infant attachment security.

Outcome

My decision to focus on *infant attachment security* is based on the human ecological principle that research and practice should be guided by an outcome involving individual, family, environmental or societal well-being (Sontag & Bubolz, 1988; Westney, Brabble, & Edwards, 1988). In Figure 2.1, *infant attachment security* refers to the infant attachment classification, originally identified by Ainsworth, Blehar, Waters, and Wall (1978), in which an infant uses his or her parent as a secure base from which to explore, and is comforted by his or her parent when distressed. Although a vast body of literature confirms the importance of mother-infant attachment for children's later developmental

outcomes (for reviews see Thompson, 1999 and Weinfield et al. 1999), recently Verschueren and Marcoen (1999) provided evidence that infant attachment to both parents is important. Therefore, in my model *infant attachment security* refers to an infants' attachment to either parent.

Internal Processes

The term *internal processes* is based on the work of Westney, Brabble, and Edwards (1988) who described the internal environment as an individual's physiological, psychological, and mental processes. Temperament is the most commonly studied *internal process* of infants in relation to infant attachment (Belsky, 1999; Sroufe, 1985; Thompson, 1999; Weinfield, Sroufe, Egeland, & Carlson, 1999). In my model *temperament* refers to the *"biologically based source of individual differences in behavioral functioning that tend to be stable over time"* (Lamb, Bornstein, & Teti, 2002, p. 354). Infant irritability, which includes negative emotionality and hypersensitivity to environmental stimuli, is the temperamental characteristic most often studied in association with infant attachment (Goldsmith & Alansky, 1987; Weinfeld, et al., 1999). Literature on infant irritability and infant attachment is described later in this paper.

Proximal Processes

The term *proximal processes* is derived from the work of Uri Bronfenbrenner (1979), who described how humans develop within layered contexts, some more proximal, such as face-to-face interactions, and some more distal, such as cultural expectations and norms. Interactions that are more proximal are assumed to have a stronger influence on a person's development

(Bronfenbrenner, 1994, 1995). Based on his review of 2 decades of research, Belsky (1999) confirmed that 2 interactional factors, parents' sensitivity and non-parental caregivers' sensitivity, were the primary proximal processes associated with infant attachment security. In the model depicted in Figure 2, sensitivity refers to the parents' and caregivers' "*ability to perceive the infant's signals accurately, and the ability to respond to these signals promptly and appropriately*" (De Wolff & van IJzendoorn, 1997, p. 573).

Distal Processes

The term *distal processes* is also based on the work of Bronfenbrenner (1979, 1994, 1995), who proposed that contextual factors such as the parents' marital relationship, parents' working relationships, family socio-economic status, and historical time, influence the infant indirectly through their effects on parent-child interaction. Belsky (1999) reported that distal processes involving parents' cognitive processes (i.e., psychological functioning and adult attachment representation) have a stronger direct influence on parent-child interaction than distal processes such as socio-economic status and marital relationship quality. Therefore, in my model, I distinguish between *near distal* processes, which are more proximal to the child, and *far distal* processes.

Near Distal Processes

In Figure 2, *near distal processes* associated with infant attachment security include: parents' high reflective function, defined as the "*capacity to reason about one's own and other's behavior in terms of mental states*" (Fonagy, Target, Steele and Steele, 1998, p.7); parents' secure caregiving representation,

which I define as *a pattern of flexible, non-defensive and positive cognitions about children and parenting* based on the work of George and Solomon (1996, 1999); and, parents' selection of sensitive non-parental caregivers, which is self-explanatory. The inclusion of parents' selection of non-parental care in the model is based on George and Solomon's (1999) suggestion that parents' caregiving representation affects both parents' direct interaction with their infant as well as parents' behaviors that indirectly influence infant attachment outcomes, such as their selection of non-parental care.

Far Distal Processes

The term *far distal processes* refers to contextual factors, such as the parents' childhood experiences, marital relationship, work relationships, family socio-economic status, and historical time which, according to Belsky (1999), impact child development indirectly through *near distal processes*, such as parents' cognitions and behaviors. Further, based on Belsky's (1999) review of interactional and contextual influences on attachment, the model assumes that *far distal processes* are layered in terms of extent of influence. For example, childhood experiences may influence reflective function both directly, and indirectly, through other *far distal processes* such as parents' psychological functioning and marital quality. Because the model in Figure 2 is primarily concerned with the influence of *near distal processes* on infant attachment outcomes, the relationships among *far distal processes* are not explicated in detail. However, this would be an important extension of the model for research focused on *far distal processes*.

Relationships Among the Contextual Processes Associated with Infant Attachment Security

An ecological perspective proposes a bi-directional influence between contextual processes (Bronfenbrenner, 1995; Sontag & Bubolz, 1988). For example, *near distal processes* (i.e., parents' caregiving representation) may not only affect *proximal processes* (i.e., parents' sensitivity), but *proximal processes* (i.e., changes in parents' sensitivity that result from a behavioral intervention) may also affect *distal processes* (i.e., change caregiving representations). However, because my model is focused on pathways to infant attachment security, the arrows in Figure 2.1 primarily depict a one-way direction of influence, and these relationships are the focus of this paper.

Although van IJzendoorn and De Wolff (1997) and Caldera (2004) reported that the incidence of infant attachment security is similar for mother-infant and father-infant dyads (approximately 65%), they found only a moderate (i.e., 60%) concordance between infant-father and infant-mother attachment. Therefore, a major assumption of the model depicted in Figure 2.1 is that although similar contextual processes affect an infant's attachment to his or her mother and father, there may be different pathways to an infant's attachment security to each parent.

The remainder of this paper focuses on the relationships between *near distal processes* – parents' reflective function, parents' secure caregiving representation, parents' selection of sensitive non-parental care -- and other contextual processes (i.e., *far distal processes* and *internal processes*) that are depicted by the arrows in the model. I focus on *near distal processes*, which

comprise parents' cognitions and behaviors, because of the implications for intervention programs targeting parents. Previous literature has provided comprehensive analyses of the empirical relationship between mothers' sensitivity and mother-infant attachment (De Wolff & van IJzendoorn, 1997), fathers' sensitivity and father-infant attachment (van IJzendoorn & De Wolff, 1997), and non-parental caregivers' sensitivity and caregiver-infant attachment (Belsky, 1999). Therefore, I do not review the literature exploring the relationship between *proximal processes* (i.e., parents' and non-parental caregiver's sensitivity) and infant attachment security.

The model depicted in Figure 2.1 acknowledges that parents are not the only influence on infant attachment, and that parents' cognitions and behaviors may be influenced by other contextual factors. An understanding of these contextual factors is important for the development of attachment interventions. Thus, in the next sections I review relevant empirical evidence and offer some additional hypotheses about the relationships of *near distal processes* to other contextual processes that are depicted in the model.

Parents' Reflective Function and Links to Infant Attachment Security

Reflective function is an aspect of adult attachment representation significantly correlated with *secure* infant attachment outcomes (Fonagy et al., 1991). Adult attachment representation refers to an adult's current 'state of mind' with respect to his or her own attachment experiences (Hesse, 1999). It is assessed using the Adult Attachment Interview (AAI; Main & Goldwyn, 1984a), a semi-structured, hour-long protocol consisting of 18 questions about participants'

relationship with their parents. AAI interview results are classified into 1 of 4 attachment categories that parallel infant attachment categories: *secure, insecure-avoidant, insecure-preoccupied,* and *insecure-unresolved*. Main and Goldwyn's original finding (1984a) that parents' adult attachment categories correspond with their infants' attachment categories 75% of the time has been replicated in several studies (for reviews see Hesse, 1999 and van IJzendoorn, 1995). This body of research indicates that parents with a *secure* adult attachment representation are more likely to have children who are *securely* attached, than parents with an *insecure* representation.

Based on the correspondence between parents' adult attachment representation and infant attachment, researchers have developed interventions to facilitate *secure* adult attachment representation in parents of infants (for examples see Bakermans-Kranenburg, Juffer & van IJzendoorn, 1998 and Erickson, Korfmacher & Egeland, 1992), but the program goals and learning strategies vary considerably (Lieberman & Zeanah, 1999), and the effects of the interventions on infant attachment are unclear (Bakersmans-Kranenburg, van IJzendoorn, & Juffer, 2003; van IJzendoorn, Juffer, & Duyvesteyn, 1995). Overall, there has been a lack of consistency in the approaches used by researchers to change parents' internal working models or attachment classification. These findings led Fonagy (1999) to argue that rather than focus on categorical change (i.e., from *insecure* attachment representation to *secure* attachment representation), attachment interventions should focus on "dimensional" (p. 618) aspects of adult attachment representation categories. He

suggested that dimensional aspects might be easier to operationalize and use as the basis of an intervention.

The continuous variables measured by the AAI scales represent dimensional aspects, and therefore have the potential to be used as the basis of attachment interventions focused on changing parents' adult attachment representation. The 9-point scales that are associated with *secure* adult attachment representation include *metacognitive monitoring, coherence of transcript,* and *reflective function* (Hesse, 1999). A high rating on each of these subscales is correlated with *secure* infant attachment. The *metacognitive monitoring* scale rates the ability of a speaker to identify inconsistencies or contradictions in his or her narrative. A high level of *metacognitive monitoring* is characterized by comments that indicate a speaker is aware of and monitors his/her thoughts. The *coherence of transcript* scale is used to rate a subject's flow of speech and recognizes that *how* a speaker describes family of origin experiences is more important than *what* he or she says. A high level of coherence is characterized by ease of conversation and consistency of narrative. The *reflective function* scale, which rates a participant's ability to reason about the mental states underlying his/her own and other's behavior, is currently being tested and modified, and has not formally been added to the AAI protocol (Hesse, 1999). However, a landmark study completed by Fonagy, Steele, Steele, Moran, and Higgitt (1991) suggested that parents' reflective function is a more important precursor of infant attachment security than the other 2 scales. This study is detailed below.

Fonagy et al. (1991) developed a scale to rate the *reflective function* of 100 expectant mothers and their male partners. A low rating was given to subjects who were unwilling or unable to reflect on the mental states underlying their own childhood behaviors, or those of their parents. These subjects used platitudes, generalizations or banal statements to describe the motivations underlying their parents' or their own behavior. High ratings were given to subjects who seemed able to understand and to separate the psychological states, motivations and emotions underlying their behavior as children from the states, motivations and emotions underlying their parents' behavior. Results demonstrated a strong correspondence between the reflective function of expectant parents and subsequent infant attachment (r= .51 and .36 for mothers and fathers respectively). Expectant parents with a high level of reflective function were more likely than parents with a low level of reflective function to have *securely* attached infants.

The significance of Fonagy et al.'s (1991) study is that it demonstrated a stronger relationship between scores on the continuous *reflective function scale* and infant attachment, than what had been observed between categorical descriptions (i.e., secure and insecure) of adult attachment and infant attachment. Also, reflective function scores were more strongly correlated with infant attachment than were scores on the *metacognition* and *coherence* scales. Fonagy et al. (1991) proposed that the *reflective function* construct may encompass both *metacognition* and *coherence of transcript* constructs. A major implication of Fonagy et al.'s study is that parenting programs that aim to

increase the incidence of *secure* infant attachment should target the *reflective function* of expectant parents. However, we do not yet fully understand the mechanisms underlying the association between reflective function and infant attachment, and this understanding is important for the development of interventions. The next section describes the hypothesized relationship between reflective function and caregiving representation that is depicted in Figure 2.1.

Relationship of Reflective Function to Caregiving Representation

The major contribution of the theoretical model depicted in Figure 2.1 is that it links reflective function to caregiving representation, or cognitions about children and parenting. Fonagy et al. (1991) proposed that parents' reflective function impacts infant attachment through parents' cognitions about infant mental states. They hypothesized that the ability to reflect upon one's own mental states, and to make the connection between mental states and behaviors may be a prerequisite to parents' ability to understand the mental states that underlie their own infants' behaviors. And, parents must be able to recognize their infant's mental states before they can "*adapt readily to his or her perspective, and manipulate the external world to fit it*" (p.207). Thus, Fonagy et al. described how reflective function (i.e., cognitions about own mental states and behaviors) affects parents' behavior (i.e., sensitivity) through cognitions about children. Although the hypothesized relationship between reflective function and cognitions about children has not yet been examined, insight about the relationship between cognitions about one's own mental states and behaviors,

cognitions about children and parenting, and parents' behavior, comes from the work of George and Solomon (1996, 1999) on caregiving representation.

George and Solomon postulated that caregiving representation consists of the adults' views or perceptions of themselves as parents, of their child, and of their relationship with their child, and is a mature transformation of adult attachment representation (i.e., views of self as child). In an initial study, George and Solomon (1996) adapted the Parent Development Interview (PDI) to explore 32 mothers' perceptions of their relationship with their kindergarten-aged child and of the parenting role. Parents' responses were categorized into 1 of 4 caregiving representation categories: *secure*, *insecure-rejecting*, *insecure-uncertain* or *insecure-helpless*. George and Solomon (1996) found a strong significant correspondence between adult attachment and caregiving representation categories (69% match; kappa=.58), between adult attachment and child attachment categories (81%; kappa=.74), and between caregiving representation and child attachment categories (81% match; kappa=.75). The significance of this study is that the relationship between caregiving representation and child attachment was comparable in strength to that observed between adult attachment and child attachment. This finding supports George and Solomon's contention that caregiving representation is a mature transformation of adult representation, and provides evidence to support Fonagy et al.'s (1991) proposal that cognitions about self in family of origin are associated with cognitions about children.

A study by Benoit, Parker, and Zeanah (1997) provided further evidence of the association between parents' representations of their child and infant attachment. The Working Model of the Child Interview (WMCI) (Benoit, 1996) was used to assess representations of 96 expectant mothers about their unborn children. This interview was similar to that used by George and Solomon (1996) except that it focused primarily on mothers' views of their child, not on views of themselves as caregivers. Representations were classified into 1 of 3 categories: *balanced, disengaged* and *distorted*. These categories corresponded to George and Solomon's *secure, insecure-rejecting*, and *insecure-uncertain* caregiving representation categories, respectively. Benoit and her colleagues (1997) found a high concordance (i.e., greater than 70%) between parents' *balanced* representations of their child measured both prenatally and one year later, and secure infant attachment measured at 12 months of age. This study provides evidence that expectant mothers' views of children predict infant attachment. Importantly, the results indicated that mothers' representations of their children were stable over the 1-year period, and did not seem to be affected by the birth or characteristics of the infant, which suggests that the influence of mothers' representations or cognitions on child attachment is uni-directional.

In Figure 2.1, I draw on the theoretical and empirical work of Fonagy et al. (1991, 1998), George and Solomon (1996, 1999) and Benoit et al. (1997) to propose that reflective function (i.e., ability to understand the connection between one's own and one's parents' mental states and behaviors) contributes to infant attachment through its effects on caregiving representation (i.e., cognitions about

children and self as a parent). Specifically, I hypothesize that parents' reflective function is positively correlated with cognitions underlying *secure* caregiving representation. This includes *empathy for children's perspectives, openness to change in parenting approaches, acceptance of the child, and positive perceptions of the child and of parenting* (Benoit et al., 1997; George & Solomon, 1996, 1999). Research is needed to determine whether reflective function precedes the development of caregiving representations associated with *secure* infant attachment, as proposed in Figure 2.1. The implication of the proposed link between reflective function, caregiving representation and infant attachment is that it may be important to include a component in attachment intervention programs that focuses on parents' reflective function. My dissertation research provides a preliminary investigation of the relationship between reflective function and caregiving representation and the results are reported in Chapters 3 and 4.

Additionally, Figure 2.1 depicts how reflective function is itself influenced by *far distal* factors, and an understanding of these relationships would be important for the development of an attachment intervention focused on reflective function. The next section describes the relationship of reflective function to far distal processes.

Relationship of Far Distal Processes to Reflective Function

In Figure 2.1, reflective function mediates the effects of *far distal processes* on parent's caregiving representations. This proposed association is based on Belsky's (1999) assertion that *distal processes* such as parents' childhood experiences, social support systems, socio-economic status (SES),

quality of the marital relationship, and work-family stress affect infant attachment indirectly through parents' cognitive processes, such as psychological functioning and attachment representations. A body of research is emerging that provides evidence of the mediational role of parents' cognitive processes, such as mothers' caregiving representation (Huth-Bocks, Levendosky, Bogat, & von Eye, 2004), maternal depression (Van Bakel & Riksen-Walraven, 2002) and mothers' ego-resilience (Coyl, Roggman, & Newland, 2002) on infant attachment. To date, the mediational role of parents' reflective function has not been explored. In this section, I present hypotheses and available empirical research exploring the relationship of *far distal processes* to reflective function.

Far distal processes include contextual factors such as the parents' childhood experiences, marital relationship, work relationships, family socio-economic status, and historical time. Based on attachment theory, Fonagy et al. (1991, 1998) proposed that a parent's childhood experiences are the major determinants of reflective function. They described how the ability to perceive the mental states of others develops in the context of the early parent-child relationship:

> *A caregiver with a predisposition to see relationships in terms of mental content permits the normal growth of the infant's mental function. His or her mental state anticipated and acted on, the infant will be secure in attachment - that is, less reliant upon defensive behaviors to maintain psychic equilibrium* (Fonagy et al., 1991, p. 214).

Fonagy and his colleagues proposed that the intergenerational concordance of *insecure* attachment could be explained by the development during childhood of defensive cognitions such as denial, which prevent adults from reflecting

accurately on their own mental states. And this, in turn, prevents them from understanding the mental states of their own children. The direct effect of childhood experiences on reflective function has not yet been studied.

However, a few studies have examined the effect of other *far distal processes* on reflective function. Fonagy and his colleagues (1991) found that reflective function was not related to demographic factors such as socio-economic status, social class or ethnic background of the parents. As well, clinical studies have found that parent personality characteristics, self-esteem, education level, and verbal intelligence are not related significantly to the reflective function scale (Fonagy et al., 1998). Although parents' socio-economic status, personality, self-esteem, education level, and intelligence may not individually impact reflective function, Belsky (1999) argued that the effect of contextual processes on infant attachment might be cumulative. He reported evidence that the presence of more than 1 of the risk factors, such as parents' psychological problems (i.e., depression), low socio-economic status, poor marital quality, and high work-family stress, combined to influence *insecure* infant attachment outcomes (Belsky, 1999). And, a recent study by Coyl et al. (2002), involving 169 mothers and their 14-month-old infants, provided evidence that *far distal processes* interact to influence infant attachment. Coyl et al. found that economic and relationship stress affected mothers' psychological functioning, which in turn affected infant attachment through the mothers' interactions with their children. Studies such as these point to the need for additional research that

would examine the relationships among *far distal processes* that may be associated with reflective function.

In addition to depicting reflective function as a mediator between *far distal processes* and caregiving representation, Figure 2.1 also depicts caregiving representation as a mediator between *far distal processes* and 2 aspects of parents' behavior: parents' sensitivity and parents' selection of sensitive non-parental care. As well, I propose that caregiving representation moderates the effects of infant temperament on parents' sensitivity. Empirical research exploring the relationships between *far distal processes* and caregiving representation, between infant temperament and caregiving representation, between caregiving representation and parents' sensitivity, and between caregiving representation and parents' selection of sensitive non-parental care is described below, and some additional hypotheses are offered.

Relationship of Far Distal Processes to Caregiving Representation

George and Solomon (1999) proposed that several processes, which fit within the *far distal processes* category in Figure 2.1, influence the development of caregiving representation. These include developmental influences such as childhood experiences, the onset of puberty in adolescence, the transition to parenthood, and the birth experience; and, social contextual factors such as marital relationship quality, social support network, and economic status. I could find only 1 study that examined the relationship between developmental influences and caregiving representation. Huth-Bocks, Levendosky, Bogat, and von Eye (2004) reported a significant influence of childhood attachment

experiences on the caregiving representation of 206 expectant mothers. Negative childhood experiences, such as *rejection*, were negatively correlated with mothers' *secure* caregiving representations about their infants and parenting, such as *openness to change in parenting approaches*. Based on Huth-Bocks et al.'s findings, and on the hypotheses of George and Solomon (1999) about the impact of developmental processes, I hypothesize that positive developmental experiences, such as a nurturing and happy childhood, positive attitudes as an adolescent toward the reproductive role, acceptance of and positive attitudes toward an existing pregnancy, and a positive birth experience, are associated with a parent's *secure* caregiving representation.

With regard to social contextual factors, Benoit, Parker and Zeanah (1997) found no relation between age, education or income level and the caregiving representation categories of 96 expectant mothers, as measured using the Working Model of the Child Interview (WMCI). However, the participants in their study were somewhat homogeneous, and the authors stressed the importance of including a more diverse group in future studies. The study by Huth-Bocks et al. (2004) was more comprehensive, examining the effects of several social contextual factors on 206 expectant mothers' caregiving representation and on infant attachment outcomes. In contrast to the study by Benoit et al. they found that risk factors, including poverty, low socio-economic status, single parenthood and domestic violence *"were significantly related to prenatal representations of caregiving, with more risk related to less secure representations"* (p. 492). Huth-Bocks et al.'s findings support Belsky's (1999) hypothesis that multiple risk

factors constitute a greater threat to infant attachment security, and that parents' cognitive processes (i.e., caregiving representation) may both mediate and be moderated by these risk factors. This study highlights the importance of theoretical models that depict the effects of multiple influences. Additionally, although Huth-Bocks et al. (2004) studied the effect of social support networks on infant attachment, they did not examine the relationship to caregiving representation that was proposed by George and Solomon (1999), and this would be important for future research.

Relationship of Infant Temperament to Caregiving Representation

The model depicted in Figure 2.1 shows the indirect influence of infant temperament on infant attachment through caregiving representation. Temperament is the most commonly studied *internal process* of infants (Belsky, 1999; Sroufe, 1985; Thompson, 1999; Weinfield, Sroufe, Egeland, & Carlson, 1999). Early research provided evidence for the hypothesis that infant irritability, which includes negative emotionality, and hypersensitivity to environmental stimuli, would be associated with *insecure* attachment (Goldsmith & Alansky, 1987). However, a significant body of research has indicated that the influence of infant irritability on infant attachment is indirect, through parents' sensitivity (for a review see Weinfield, Sroufe, Egeland, & Carlson, 1999). For instance, Van den Boom (1994) conducted a longitudinal study with 100 infants from low-income families who presented with high levels of irritability in neonatal examinations. Between the ages of 6 and 9 months, half of the mothers participated in a home-based program to enhance their sensitivity, and half did not receive any

intervention. Assessment of infant attachment at 12 months of age indicated *"significantly more intervention infants than control infants were securely attached" (p.1472)*. A total of 31 intervention infants were securely attached compared to 11 non-intervention infants. Given that all the infants were irritable, this study provided evidence that parent sensitivity moderates the effects of infant temperament on infant attachment. However, in Van den Boom's study, we do not know if the changes in parents' sensitivity were preceded by changes in their cognitions about their infants. In the model in Figure 2.1, I propose that the effect of infant temperament on parents' direct interaction (i.e., sensitivity) is moderated by parents' caregiving representation, which would include parents' cognitions about why their infant is irritable, and judgements about their own ability to soothe their infant. Future research to explore this proposed relationship is important given empirical evidence, described in the next section, of the association between caregiving representation and parents' sensitivity.

Relationship of Caregiving Representation to Parents' Sensitivity

George and Solomon (1999) proposed that parents' caregiving representation influences parents' interactions with their children and hypothesized that positive views of the parenting role and of children would be associated with higher levels of parents' *sensitivity*. Parents' *sensitivity*, defined as the "*ability to perceive the infant's signals accurately, and the ability to respond to these signals promptly and appropriately*" (De Wolff & van IJzendoorn, 1997, p. 573), is the behavior most often studied in association with infant attachment. Two decades of research has found that parents' *sensitivity* is

moderately correlated with infant attachment and accounts for approximately one-third of the variance in infant attachment outcomes (for a review see De Wolff & van IJzendoorn, 1997).

To date, only a few studies have examined the relationship between caregiving representation and parents' *sensitivity*. Slade, Belsky, Aber, and Phelps (1999) examined correlations between scaled scores on the Parent Development Interview (PDI), which explores characteristics of the mother's representations of her child, and ratings of several aspects of maternal sensitivity observed during home visits with 125 mothers and their male toddlers. In their study, caregiving representation referred to a mother's feelings about her relationship with her child, and they did not explore her feelings toward parenting. Slade and her colleagues found that mothers who expressed more joy and pleasure in their relationship with their child engaged in more positive parenting behaviors than mothers who expressed negative affect about their relationship with their child (r=. 35).

Koren-Karie, Oppenheim, Doleve, Sher, and Etzion-Carasso (2002) examined the associations among 129 mothers' insightfulness into their infants' internal experience, mothers' sensitivity to their infants' signals, and infants' attachment to their mothers. They defined insightfulness as:

> *...parents' capacity to consider the motives underlying their children's behaviors and emotional experiences in a complete, positive, and child-focused manner while taking into consideration their children's perspectives (p. 534).*

This definition is conceptually similar to George and Solomon's (1996) description of secure caregiving representation. Koren-Karie et al. found that

mothers classified as positively insightful were more sensitive when interacting with their infant, and were more likely to have securely attached infants.

Lundy (2002) explored the relationship between fathers' and mothers' mind-related comments, frequency of interactional synchrony (i.e., sensitivity) and infant attachment for 24 families. For both mothers and fathers Lundy found that parents' appropriate comments about their infants' mental states (i.e., accurate identification of the mental states underlying infants' behaviors) were associated with more interactional synchrony, which was in turn associated with secure infant attachment outcomes.

These 3 studies (Koren-Karie et al., 2002; Lundy, 2002; Slade et al., 1999) provide evidence of the relationship between parents' cognitions about infants, and parents' *sensitivity*. Nonetheless, more research is needed to explore a wider range of parents' cognitions including cognitions about children and cognitions about oneself as a parent, both of which George and Solomon (1996, 1999) proposed were important aspects of caregiving representation. On the basis of the empirical findings reported in this section, and on the work of George and Solomon, I hypothesize that a *secure* caregiving representation, including cognitions such as *empathy for children's perspectives, acceptance of the child, openness to change in parenting approaches,* and *positive perceptions of the child and of parenting* (Benoit, Parker and Zeanah, 1997; George and Solomon, 1996, 1999) would be significantly associated with parents' *sensitivity*.

Relationship of Caregiving Representation to Parents' Selection of Non-parental Care

In the model depicted in Figure 2.1, I propose that caregiving representation affects parents' selection and monitoring of non-parental care. This hypothesis is based on the work of George and Solomon (1996, 1999) who suggested that the role of parent as 'protector' affects not only parents' direct interaction with their child (i.e., sensitivity), but also affects indirect interactions, such as parents' selection and monitoring of the child's non-parental care. The NICHD Early Child Care Research Network followed 1,153 infants and their mothers, when the infants were 1 to 15 months of age (NICHD, 1997). They found that infants were less likely to be securely attached when low maternal sensitivity was combined with poor quality child care, more than minimal amounts of child care, or more than 1 care arrangement. Pierrehumbert, Ramstein, Karmaniola, Miljkovitch and Halfon (2002) confirmed that poor quality childcare, characterized by non-parental caregivers' insensitivity to the child, predicted poor developmental outcomes, and the risk increased if the mother was also insensitive. And, recent research indicates that very poor quality care (i.e., insensitive to the child's needs, high child-caregiver ratios) constitutes a risk factor for *insecure* mother-infant attachment, even when the mother is sensitive in direct interaction with her infant (Aviezer, Sagi-Schwartz and Koren-Karie, 2003). Overall, it seems that childcare quality has a significant effect on child attachment outcomes, and it is therefore important that researchers understand factors that influence parents' selection and monitoring of non-parental care.

One factor that has been studied extensively with regard to parents' selection of non-parental care is parents' cognitions; however, most of this research has examined parents' cognitions about childcare (Lowe & Weisner, 2004; Mason, 2003; Pierrehumbert, Ramstein, Karnaniola, Miljkovitch, & Halfon (2002); Pungello & Kurtz-Costes, 2000; Sagi, Koren-Korie, Gini, Ziv, & Joels, 2002). These studies have explored parents' perceptions about the effect of non-parental care on children, what type of childcare is best, the age of child for which childcare is appropriate, and important characteristics of childcare providers. Not surprisingly, these cognitions are significantly related to parents' childcare choices.

Although perceptions of childcare may reflect parents' underlying cognitions or beliefs about children and parenting, I could find no studies which have directly examined the relationship between parents' cognitions toward children and parenting and their selection of non-parental care. In an exploratory study Uttal (1997) interviewed 32 working class mothers about factors that influence their childcare choices. She reported that mothers' personal preferences about childcare practices are "based on her beliefs about appropriate childrearing practices, ideas that she has been taught, and her world view" (p. 260). Although this study provides some preliminary evidence of the relationship between parents' cognitions about parenting and their choice of caregivers, further research is needed to more fully understand how parental cognitions influence their selection and monitoring of non-parental childcare. Because parents with *secure* caregiving representation value the caregiving role,

value children, and demonstrate empathy for the perspectives of children (George & Solomon, 1996), I hypothesize that they would seek caregivers who share their positive attitudes toward children and caregiving, and who exhibit sensitivity in direct interaction with children. Nevertheless, there is some evidence that regardless of parents' preferences or attitudes toward non-parental care, parents' choice of non-parental care may be influenced by far distal factors, such as their level of income, availability of daycare, and workplace demands (Lowe & Weisner, 2004; Pungello & Kurtz-Costes, 2000). The effect of these *far distal processes* on parents' selection of non-parental care is described in the next section.

Relationship of Far Distal Processes to Parents' Management of Non-parental Care

Pungello and Kurtz-Costes (2000) theorized that 3 influences affected parents' childcare search and selection behaviors: environmental constraints, work schedule flexibility and maternal beliefs about non-parental care. They examined these hypothesized relationships in a sample of 102 working women, who were expecting their first child. Pungello and Kurtz-Costes found that for some mothers who would prefer to care for their own infants, employment constraints, such as inflexible work schedules and economic need forced them to place their child in non-parental care. And, Lowe and Weisner (2004), in their study of 38 low-income families, found that the selection of non-parental care was influenced not only by parents' values and beliefs about childcare, but also material and social resources, family support/conflict, and availability of childcare. These studies suggest that environmental constraints may moderate the

influence of parents' cognitions on parents' selection of childcare and this relationship should be investigated in future research.

In summary, research suggests that parents' selection and monitoring of non-parental care may be influenced by several socio-contextual factors in addition to caregiving representations (i.e., cognitions about children and parenting). Future studies could examine how parents' caregiving representations interact with *far distal processes*, such as cultural background, socio-economic status, availability of childcare, and social support networks to affect parents' selection and monitoring of caregivers.

Discussion and Implications

In this paper I developed a theoretical model that situates reflective function, a parental cognitive process that is strongly associated with *secure* infant attachment, within an ecological framework. The model describes the relationships between parents' reflective function (i.e., understanding of the connection between mental states and behaviors) and other contextual and interactional determinants of attachment identified in the literature. My model specifies how parents' reflective function impacts infant attachment through parents' cognitions about children and parenting (i.e., caregiving representation) thereby providing a link between the work of Fonagy et al. (1991, 1998) and that of George and Solomon (1996, 1998) and Benoit, Parker and Zeanah (1997). And, by describing contextual processes associated with *secure* infant attachment, my model provides an ecological framework for the development of parent interventions that aim to facilitate *secure* infant attachment. The model

has several implications for the development of attachment research and interventions focused on parents' reflective function.

A key assumption of the model is that parents' reflective function is an important precursor of parents' secure caregiving representation (i.e., *empathy for the infant's perspective)*, which is associated with *secure* infant attachment. Research is needed to examine the proposed causal effect of reflective function on caregiving representation. This could be accomplished through intervention research, which could examine the effect of a reflective parenting program on parents' cognitions about children and parenting, as I have done for the empirical component of my research described in Chapter 3. Based on Fonagy et al.'s (1991, 1998) definition and description of reflective function, an intervention could focus on guiding participants' reflection on experiences from their childhood. Activities could be developed to help participants remember interactions with their parents, to identify and understand the mental states underlying their parents' behavior, and to separate the mental states of their parents from their own mental states as children. Then pre-post measurements of reflective function and cognitions about children and parenting could be used to explore the short-term impact of the program. Long-term effects on parents' sensitivity and infant attachment could be examined to determine the practical significance of such an intervention.

A second key assumption of the model depicted in Figure 2.1 is that *near distal processes* (i.e., reflective function and caregiving representation) may both mediate and be moderated by *far distal processes*. Further studies are needed to

examine the mediating and moderating effects of *far distal* processes on infant attachment security. Because previous research and a human ecological perspective suggest that individual *far distal processes* combine and interact to affect infant attachment outcomes (Belsky, 1999; Huth-Bocks, et al., 2004) future research could examine the individual and combined influence of *far distal processes* on each of the *near distal processes* described in Figure 2.1. What other distal processes influence reflective function, besides childhood experiences? Research has not yet examined the effect of marital quality, social support systems and work environment on reflective function, and we need to explore if the ability to understand the mental states and behaviors of others is facilitated in other environments besides one's family of origin (i.e., marital relationship, individual or group interventions). This research would determine if there are alternative pathways to a high level of reflective function that could be used to augment attachment interventions.

As well, the effects of *far distal processes* on caregiving representation and parents' selection and monitoring of non-parental care have not yet been fully explored. To date, only a few studies have examined the effects of *far distal processes* on caregiving representation (Benoit et al., 1997; Huth-Bocks et al., 2004). More research is needed to investigate the individual and combined influences of *far distal processes* on caregiving representation. How do processes such as psychological functioning, developmental processes, social support, marital quality, and work-family stress interact with reflective function to affect caregiving representation? And finally, how do other *far distal processes*

influence parents' selection and monitoring of non-parental care. We know that employment constraints can be important moderators of parents' selection of non-parental care, but we know less about the influence of marital quality and social support networks. The influence of these distal factors will need to be considered in future research. Studies such as this could provide information that would guide the development of goals and strategies for future parent programs, and would assist the identification of processes and risk factors that may impact program outcomes.

Concluding Comments

Researchers have called for the development of attachment research and intervention theoretical models that situate variables in an ecological framework (Belsky, 1997; Belsky, 1999; Cowan, 1997; De Wolff & van IJzendoorn, 1997; Thompson, 1997; van den Boom, 1997; van IJzendoorn & De Wolff, 1997). In this paper I have situated reflective function, a key cognitive process associated with *secure* infant attachment, into a model describing multiple and nested contextual influences. Such models will hopefully advance our understanding of the various influences on parents' cognitions and behaviors, and will assist in the development of effective interventions to reduce the incidence of *insecure* infant attachment. The major implication of ecological models for attachment interventions is the need to consider the influence of several contextual factors on parent-child interaction. In addition to a focus on proximal processes, such as parent-child interaction, programs may be more effective in both the short and long-terms if they also include components focused on *near distal processes*

such as parents' reflective function, caregiving representation, and parents' selection of non-parental caregivers. The model also suggests that the effects of *far distal processes* may limit or moderate the effectiveness of interventions focused on *near distal processes*. Policies and programs are needed which would address risk factors such as maternal depression, employment constraints, marital stress, low socio-economic status, and availability of quality childcare, which when combined, more significantly affect infant attachment outcomes (Belsky, 1999). In summary, to effect a decrease in the overall incidence of *insecure* infant attachment, an ecological model points to the need for interventions that target both *distal and proximal* contextual processes affecting infant attachment security.

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CHAPTER 3

EVALUATION OF A PILOT REFLECTIVE PARENTING PROGRAM ENHANCEMENT TO PRENATAL EDUCATION

Introduction

Infant attachment security is an important outcome of early parent-infant interaction and is subsequently associated with several aspects of later socio-emotional development (for reviews of literature on this topic see Thompson, 1999; Weinfield, Sroufe, Egeland, & Carlson, 1999). At 12 months of age, *securely attached* infants (60-65%) use the parent as a secure base from which to explore a new setting and seek proximity to their parent when under stress. In contrast, when *insecurely attached* infants (35-40%) are stressed, they either avoid their parent or show combinations of resistance, anger and distress (Ainsworth, 1976; Ainsworth, Blehar, Waters, & Wall; 1978). Given that approximately 1 in every 3 infants in the general population exhibits *insecure* attachment (DeWolff & van IJzendoorn, 1997), it is not surprising that researchers are interested in facilitating *secure* infant attachment through parent education and intervention programs (for a review of attachment intervention programs see van IJzendoorn, Juffer, & Duyvesteyn, 1995). Most programs target parents soon after the birth of their first child, however, empirical evidence of a significant association between the cognitions of expectant parents and infant attachment security (Benoit, Parker, & Zeanah, 1997; Fonagy, Steele, Steele, Moran, and Higgitt, 1991; George & Solomon, 1996) suggests that parents' cognitions should be targeted prenatally.

A cognition of expectant parents that has been found to be associated with *secure* infant attachment is reflective function (i.e., understanding of the mental states underlying behaviors). Fonagy et al. (1991) found a fairly strong correlation between the reflective function of 200 expectant parents and subsequent infant attachment (r= .51 and .36 for mothers and fathers respectively). The implication of Fonagy et al.'s study is that prenatal education programs should include a component focused on the improvement of parents' reflective function. As a majority (65%) of first-time Canadian parents attend prenatal education (Levitt, Hanvery, Avard, Chance, & Kaczorowski, 1995) these classes are an unmatched opportunity to increase the incidence of *secure* infant attachment in the general parenting population by enhancing parents' reflective function. However, a reflective parenting component has not yet been incorporated into the curriculum of prenatal education programs offered by local health regions in Canada (Community Health Services, 2001). To address this gap, I developed a program enhancement to prenatal childbirth education [1] to develop expectant parents' reflective function. This paper describes the evaluation of a pilot of the enhancement that was conducted in 3 sites within the Capital Health Authority located in Edmonton, Alberta. The evaluation study was guided by 2 major questions. First, what are the short-term effects of the program enhancement on participants' reflective function and on their cognitions about children and parenting that are associated with *secure* infant attachment? And,

[1] The parenting program enhancement was developed in conjunction with Dr. Berna Skrypnek, who is a chartered psychologist.

second, how feasible is the inclusion of this enhancement in existing prenatal education classes?

Prior to discussing the research goals, methods and findings of the evaluation study, I provide an overview of the theoretical and empirical foundations for the reflective parenting program enhancement. I conclude with a discussion of implications that the evaluation findings have for practice and for future research.

Theoretical and Empirical Framework

In light of the association between infant attachment security and later socio-emotional development, researchers have developed interventions to enhance parents' cognitions and behaviors associated with *secure* infant attachment. To date, most attachment intervention programs have targeted populations at-risk of *insecure* attachment, such as families presenting with significant social or psychological challenges, and have ignored the general parenting population (Bakersmans-Kranenburg, Juffer, & van IJzendoorn, 1998; Erikson, Korfmacher, & Egeland, 1992; Juffer, van IJzendoorn, & Bakersman-Kranenburg, 1997; Stams, Juffer, & van IJzendoorn, 2001; van IJzendoorn, Juffer, & Duyvesteyn, 1995). The few programs that do target the general population involve mothers soon after the birth of their child and, similar to programs for at-risk populations, tend to be behaviorally focused (Niccols, 2000; van IJzendoorn, Juffer, & Duyvesteyn, 1995). The moderate success of behavioral programs (van IJzendoorn, Juffer, & Duyvesteyn, 1995), combined with evidence that fathers play an important role in the attachment of their infants

(Belsky, 1990; Fonagy et al., 1991), and that cognitions of expectant parents predict infant attachment security (Benoit et al., 1997; Fonagy et al., 1991) suggest that programs are needed which target cognitions of both parents before the birth of their first child.

A cognition of expectant parents that has been significantly associated with *secure* infant attachment is reflective function, defined as the "*capacity to reason about one's own and other's behavior in terms of mental states*" (p.7, Fonagy, Target, Steele, & Steele, 1998). Fonagy et al. (1991) used a 9-point scale to rate the reflective function of 100 expectant mothers and 100 expectant fathers, based on participants' responses to interview questions about their relationship with their own parents. A low rating was given to subjects who were unwilling or unable to reflect on their own intentions or those of their parents. These subjects used platitudes, generalizations or banal statements. High ratings were given to subjects who seemed able to understand and separate the psychological states, motivations and emotions underlying their behavior as children from the states, motivations and emotions of their parents. Results demonstrated a fairly strong correspondence between the reflective function of expectant parents and subsequent infant attachment (r= .51 and .36 for mothers and fathers respectively).

Fonagy et al. (1991) proposed that reflective function (i.e., the ability to understand and distinguish the mental states of one's parents and oneself in family of origin experiences) affects infant attachment through parents' cognitions about children. George and Solomon (1996, 1999) use the term *caregiving*

representation to describe parents' cognitions about children and about the parenting role. Caregiving representations that have been associated with *secure* infant attachment outcomes include *empathy for the child's perspective, openness to change in parenting approaches, acceptance of the child,* and *positive perceptions of the child* (Benoit et al., 1997; George & Solomon, 1996). Based on the work of Fonagy et al. (1991), George and Solomon (1996, 1999) and Benoit et al. (1997), I propose that expectant parents' reflective function predicts caregiving representations (i.e., cognitions about children and the parenting role), which are in turn associated with *secure* infant attachment. To examine this proposed relationship, I evaluated a pilot program enhancement to prenatal education, which aimed to develop expectant parents' reflective function. The remainder of this paper describes the evaluation of the pilot program.

Research Goals

The evaluation of the pilot program enhancement was guided by 2 goals. The first was to explore the short-term effects of the reflective parenting program on the reflective function and caregiving representation (i.e., cognitions about children and parenting) of expectant parents. The hypotheses were that: 1) participants with low pre-program reflective function would demonstrate improvement in reflective function by the end of the program; 2) an increase in reflective function would be associated with an increase in positive attitudes toward children and parenting; and, 3) all participants would report an increased understanding of infant emotional development and of infant attachment, as a

result of participating in the program. The second goal of the evaluation was to explore the feasibility of the inclusion of a reflective parenting enhancement to prenatal education classes. This involved an exploration of the perceptions of nurse educators and program participants about the length, timing and usefulness of the reflective parenting program activities.

Methods

Recruitment

The reflective parenting program was piloted at 3 community health centers within the Capital Health Authority (CHA), which provides a wide spectrum of preventative and acute care health services to people located in the northern half of the province of Alberta. Once ethics approval was obtained, experienced nurse educators were recruited through the CHA in Edmonton to incorporate the reflective parenting program into 1 of their regular 5-week, 2 hours per week, prenatal classes (see Appendix B1 for a copy of the Information Sheet provided to prenatal nurse educators). Four of 12 prenatal educators volunteered, for a response rate of 33% (see Appendix B2 for the Nurse Educator Consent Form). They attended a half-day training session conducted by the researcher to prepare them to incorporate the reflective program into the regular prenatal education curriculum (see Appendix A3 for the Nurse Training Program).

The focus of the intervention was couples who were married or cohabiting, were over 18 years of age, were in their last trimester of pregnancy, and who had no other children. Couples expecting their first child were recruited to 1 of 4

enhanced prenatal programs from the registration list for prenatal education classes. Approximately 1-2 months before each class was scheduled to begin, the CHA sent expectant parents a letter notifying them of the enhanced program, which was accompanied by a letter from the researcher inviting them to participate (see Appendix C1 for a copy of the letter). Between January and April 2004, 110 couples were sent letters inviting them to participate in the program. Interested parents contacted the researcher who provided them with detailed information about the program (see Appendix C3 for a copy of the Parent Information Sheet). Fourteen couples volunteered, for a response rate of 13%. One enhanced program was cancelled due to low enrollment (i.e., fewer than 3 couples). There were 6, 5 and 3 couples attending each of 3 enhanced programs. These were smaller groups than are typically scheduled for prenatal education (i.e., 12-15 couples). See Appendix C4 for a copy of the Parent Consent Form.

The Reflective Parenting Program

The main goal of the reflective parenting program was to increase the reflective function [i.e., capacity to reason about their own and their parents' behavior in terms of mental states] of expectant parents. A secondary goal was to increase the participants' understanding of infant emotions and infant attachment. Based on the work of Fonagy et al. (1991, 1998), two activities, a reflective parenting workbook and facilitated group discussion, were developed to reach the goals. The workbook comprised information about infant emotional development and a written journal component (see Appendix A1 for a copy of the

Reflective Parenting Workbook). The participants were given the reflective workbook at the first class, and were asked to individually complete the written journal at home. They were encouraged to discuss their entries with their partners. The researcher facilitated the group discussion component at the end of classes 2, 3 and 4. The information provided to parents, the written journal component, and the group discussion component are detailed below.

Information about Infant Emotional Development

The introduction at the beginning of the workbook included general information about infant emotional development and attachment, and provided a rationale for reflecting on family of origin experiences. Throughout the workbook the parents were provided with specific information about infant emotions. Based on the work of Bowlby (1969), the workbook focused on 6 emotions that are assumed to activate infant attachment-seeking behavior, including pain, anger, frustration, fear, loneliness, and sadness. As an example, an excerpt focused on fear is provided below.

> When Children Are Afraid
> Newborn babies have a startle response to loud noises and sudden movements, especially to sudden falling sensations. This is thought to be an early form of fear. Fear responses become more clear and defined as the baby grows, and by the age of 9 months babies show fear by crying in response to specific events or strangers.

Written Journal

The journal component of the workbook provided participants with guided reflective activities designed to stimulate their awareness of emotions experienced in childhood, develop their ability to contrast their own childhood emotional states with those of their parents and, help participants to make a

connection between emotional states and the behavior of their parents. At the end of each section in which they examined and contrasted their mothers' and fathers' responses to a specific childhood emotion, participants were guided to think about how they will respond to that emotion in their own child. This reflective process was repeated for each of 6 emotions. The expectant parents were asked to complete the written journals for 2 emotions each week.

Group Discussion

Originally, I planned that the nurse educators leading the prenatal classes would facilitate the group discussion at the end of sessions 2, 3 and 4. However, at the training session, the nurses said they did not feel comfortable leading a discussion based on the reflective parenting workbook entries, and so I agreed to facilitate the group discussion in all 3 programs (see Appendix A2 for a copy of the Group Discussion Guide). For each half-hour group discussion, participants were prompted to review instances in which an infant might experience the target emotion, based on the information provided in the reflective workbook. For example, they identified instances when a newborn might experience fear. Then they discussed how they would recognize specific emotions in a newborn, and identified strategies for dealing with those emotions. The emotions that were discussed each week corresponded to those that the expectant parents had reflected upon in their journals. If the parents wanted to discuss individual journal entries, they were encouraged to talk to the nurse educator or the researcher privately. As well, a list of counselling resources was provided to parents at the first class (see Appendix F1 for a copy of the Resource List).

Once the reflective program enhancement was underway, I made 2 modifications to the group discussion component. During the first group discussion of strategies for dealing with anger and frustration, I noted that several parents were supportive of the use of corporal punishment (i.e., spanking) with toddlers. Although spanking (i.e., using a flat hand on the child's buttocks), when used in moderation to discipline children over the age of 2, is not associated with adverse child outcomes (for a review see Larzelere, 2000), a recent study by Slade and Widdow (2004) suggests that parents' use of corporal punishment before the age of 2 years constitutes a risk factor for children's later socio-emotional development. And, Coyl, Roggman, and Newland (2002) found that mothers' use of spanking was associated with *insecure* attachment outcomes in infants who were 14 months old. Therefore, I provided additional written information to participants in all 3 groups about alternatives to corporal punishment. A second modification was made to the group discussion of sadness and loneliness. Although discussion focused primarily on parents' responses to their infants' emotions, I also included an activity in which parents identified symptoms of postpartum loneliness or sadness that they might experience in themselves, and strategies to deal with these emotions. I included this because of the association between mothers' chronic depression and *insecure* infant attachment that has been found in recent research (Coyl, Roggman, & Newland, 2002). To ensure consistency across programs, these modifications were made to the group discussion for all 3 classes.

Data Collection

Program Effects

To explore the short-term effects of the program, 3 paper and pencil questionnaires were administered at the beginning of the first prenatal class, which each partner completed individually. These included Form A of the Self-Reflection and Insight Scale (SRIS), the Adult-Adolescent Parenting Inventory (AAPI-2), and a questionnaire about socio-demographic characteristics (Demographic Questionnaire). Paper and pencil questionnaires (i.e., SRIS and AAPI-2) were used to measure participants' reflective function and caregiving representation, which are usually measured using interview methods (e.g., Adult Attachment Interview [AAI] and Parent Development Interview [PDI]). There were 3 major reasons for this substitution:

1) The AAI and PDI each require approximately 1 and 1/2 hours to administer. Therefore, each person in my study would have been required to participate in two 3-4 hour assessments (1 pre-program and 1 post-program), which was deemed excessive for an evaluation of a short-term (i.e., 5-week) pilot intervention program. The prenatal program is only 10 hours in length, and the interview assessments would require a similar amount of time, which would almost double the time requirement for participants. And, the lengthy interview assessments might influence program outcomes. This possibility is supported by previous research that suggests the AAI may influence parents' awareness of the mental states underlying behaviors, especially if it is the first time they have ever

discussed family of origin experiences with a supportive clinician (Hesse, 1999). Therefore, I decided to use shorter and less intensive methods to assess parents' reflective function and caregiving representation.

2) One of the criticisms of attachment research is the reliance on categorical descriptions (i.e., adult attachment and caregiving representation categories) to develop and evaluate intervention programs (Fonagy, 1999). Although the subscales of the AAI (i.e., reflective function) and subscales of the PDI (i.e. openness to change in parenting approaches) have the potential to be used as the basis of attachment intervention, such programs have not yet been developed. For the present study, I was interested in 'dimensional' or continuous qualities of secure adult attachment and caregiving representation, and therefore identified instruments that would provide a continuous measurement of these constructs, and which have demonstrated validity.

3) The AAI and PDI have been used primarily in correlational studies and their test-retest reliability for short-term interventions has not yet been established. Therefore, I decided to use measurements that have demonstrated pre and post-program reliability.

The AAPI-2 (Form B) and SRIS were re-administered at the last class. To examine participants' perceptions of changes in their knowledge and understanding of infant attachment and emotional development, expectant parents were asked to complete the Reflective Parenting Questionnaire at the

last class. The instruments, which took 15-20 minutes for the participants to complete, are described below.

Self-Reflection and Insight Scale (SRIS). The Self-Reflection and Insight Scale (SRIS) was developed by 3 Australian psychologists to measure 2 constructs associated with behavior change processes (Grant, Franklin, & Langford, 2002): 1) self-reflection, which the authors define as "the inspection and evaluation of one's thoughts, feelings and behavior", and
2) insight, defined as "the clarity of understanding of one's thoughts, feelings and behavior" (Grant, et al., 2002, p.821). See Appendix G3 for a copy of the instrument.

The SRIS is a 20-item self-report inventory, and each item is rated on a Likert scale ranging from 1 to 6 with "1" indicating low agreement and "6" indicating high agreement. Summed scores are calculated for each of the 3 subscales. Six items are used to calculate the summed scores for each of the *Engagement in self-reflection* (Items 1, 8, 10, 13, 16, 19) and *Need for self-reflection* subscales (Items 2, 5, 7, 12, 15, 18), each with a possible range of 6-36. Eight items are used to calculate the summed score for the *Insight* subscale (Items 3, 4, 6, 9, 11, 14, 17, 20), which has a possible range of 8-48. Higher scores reflect a higher level of that construct. See Appendix G3 for a copy of the instrument.

The *Need for self-reflection* and *Engagement in self-reflection* subscales examine the degree to which respondents desire to understand their emotions, and the degree to which respondents actually engage in purposeful thinking

about their emotions, respectively. These 2 subscales are highly correlated with each other and factor analysis indicates that they are similar constructs. Therefore Grant et al. propose that these scales, combined, represent 1 construct entitled *Self-reflection.*[2]

The *Insight* subscale is believed to tap a different construct than the other 2 subscales: the degree to which a person understands the connection between his or her emotions and behaviors. The *Insight* construct is consistent with Fonagy et al.'s (1991) reflective function construct, which involves understanding the connection between mental states and the behaviors of self and others. However, there is a major difference in how the *SRIS Insight* subscale and Fonagy et al.'s Reflective Function scale measure understanding of the mental states underlying behaviors. For the *SRIS Insight* subscale participants rate their own ability to understand the mental states underlying their behaviors. In contrast, for Fonagy et al.'s Reflective Function scale, an experimenter rates the ability of participants to understand the mental states underlying their behaviors based on responses to several interview questions. And, Fonagy et al.'s scale requires extensive training and expertise to administer whereas the SRIS does not. Therefore Fonagy et al.'s scale is more likely to detect parents' actual ability to understand their own mental states than a self-report measurement, such as the SRIS. It may be that the SRIS, as a self-report measurement, inflates estimations of parents' level of reflective function because participants respond how they believe the experimenter would like them to respond. And it is not

[2] Although Grant et al. (2002) propose that the Need and Engagement subscales represent the same construct, norms are not available for the combined score. Therefore, the individual subscale scores were used in this study.

known if the level of reflective function might affect a participant's ability to accurately assess or report on their understanding of mental states. However, Grant et al. (2002) have attempted to account for subject bias by testing the reliability and validity of the SRIS and this is described in the next section.

SRIS test-retest reliability over a 7-week period is within an acceptable range (i.e., r = .77 to .78). Grant et al. (2002) examined validity of the SRIS with a sample of 121 University students, with a mean age of 20 years, and found a significant negative correlation between the *Self-reflection* (i.e., *Need and Engagement*) subscales and the *Insight* subscales. Additionally, they found a significant negative correlation between the *Insight* subscale and measures of depression, anxiety and stress, and a positive correlation with measures of cognitive flexibility and self-regulation. The *Self-reflection* subscales were positively correlated with measures of anxiety and stress. These findings point to important differences in the constructs. The authors propose that the *Self-reflection* subscale measures rumination on internal mental states in the absence of understanding of the connection to behavior. Thus people with high *Self-reflection* subscale scores may be more prone to anxiety without understanding the causes. In contrast, the *Insight* subscale measures the ability of people to understand the connection between their emotions and behaviors, and to act on that understanding. Not surprisingly, the *Insight* construct is associated with the ability of psychotherapy clients to make behavioral change.

Adult-Adolescent Parenting Inventory (AAPI-2). The AAPI-2 (Bavolek & Keene, 1999) was designed to assess the parenting and child rearing attitudes of adult

and adolescent parent and pre-parent populations.[3] The AAPI-2 has an assessed reading level of Grade 5, and can be read orally to non-readers. Parents indicate their agreement with 40 statements describing children's and parents' behaviors using a 5 point scale. An example of a statement from the test is: "Parents spoil babies by picking them up when they cry". Responses to the items on the AAPI-2 test are assigned a numerical value of 1 to 5. Raw scores are calculated for each of the 5 subscales by adding the numerical raw scores. Using the test manual, the raw scores for each subscale are converted into standardized scores, with a range of 1 to 10, called sten scores. Sten scores were used for the analysis in this study. The AAPI-2 has 5 subscales: *appropriate expectations of children, empathy for children's needs, values alternatives to corporal punishment, supports appropriate family roles, and values children's power and independence*. Although the constructs measured by the AAPI-2 (i.e., empathy for the perspectives of children) are similar to aspects of caregiving representation identified by George and Solomon (1996) and Benoit et al. (1997), there are some important differences in how the constructs are measured. For George and Solomon's and Benoit et al.'s instruments, trained researchers use several scales to rate participants' understanding of their children's needs, behaviors and mental states based on participants' responses to several interview questions. In contrast, the AAPI-2 measures participants' *self-reported* understanding of children's needs, behaviors and mental states. Therefore, the interview measurements may be more sensitive in detecting parents' actual ability to understand their children's mental states than would a self-report

[3] Due to copyright limitations a copy of this instrument is not included in the Appendix.

measurement. As mentioned in the discussion of the SRIS, a self-report measurement may inflate estimations of parents' attitudes toward children and parenting because participants respond how they believe the experimenter would like them to respond. Despite the limitations inherent in a self-report instrument, the reliability and validity of the AAPI-2 instrument have been established over 30 years of research and are summarized in the next section.

The AAPI-2 norms have been standardized on a sample of over 700 parents in the United States (Bavolek & Keene, 1999). Importantly, the results of ANOVAs that examined differences in mean sten scores for 24 abusive (i.e., parents charged with physical abuse by the Department of Social Services) and 47 non-abusive parents, indicated significant differences between the 2 groups. Generally, abusive parents received significantly lower sten scores than non-abusive parents on the AAPI-2 subscales, thereby providing evidence of the discriminant validity of the measure. The test-retest reliability of the subscales of the AAPI-2 for Forms A and B is reported to range from .88 to .97.

Demographic Questionnaire. At the first data collection point, the participants completed a paper and pencil questionnaire about their age, sex, race (white, black, asian, first nations or other), household income (0-$30,000; $30,000-$60,000; >$60,000), education level (high school or less, some post-secondary completed, post-secondary degree or certificate obtained, bachelor's degree, professional or graduate degree, and other), and employment status (full-time homemaker, work part-time, work full-time, student part-time, student full-time,

unemployed, and other). See Appendix G2 for a copy of the Demographic Questionnaire.

Reflective Parenting Questionnaire. In addition to completing the AAPI-2 and SRIS at the last session, participants completed a Reflective Parenting Questionnaire, which I developed using a "retrospective-pretest method", as described by Bogenschneider, Olson, Mills and Linney (2002). This method addresses the reliability issue faced by evaluators when the information from an educational program "*helps participants realize that they knew less about the topic than they originally thought*" (p. 194). It is preferable to pre-post measures of knowledge because participants may not realize, at the outset of a program, how little they know (i.e., about infant attachment). In this study, participants were requested to use a series of 4-point scales, where "1" = "Not at all" and "4" = "Very well", to indicate how well they understood their own, their parents, and infants' emotional development before participating in the reflective program, and after the program. See Appendix G1 for a copy of the Reflective Parenting Questionnaire.

Program Feasibility

To explore the feasibility of the inclusion of a reflective parenting enhancement to prenatal education classes, data were collected from 3 sources: nurses, participants, and participants' workbooks. The 3 nurse educators were interviewed at the end of the program to explore their perspectives on the appropriateness of the written materials (e.g., workbook), the effectiveness of the group activities, strengths and challenges of the pilot program and

recommendations for future enhancements (see Appendix D1 for a copy of the Nurse Interview Guide). I interviewed 2 of the nurses together and the other individually. All 28 expectant parents were invited to participate in 1 of 2 group interviews. A total of 4 couples (8 participants) from the 3 programs attended two 2-hour focus groups (2 couples per focus group). The group interview explored their perceptions of the length, timing, usefulness of the materials (e.g., workbook), and of the group discussion (see Appendix D2 for a copy of the Participant Interview Guide). All interviews were audio-taped and transcribed. So that I could analyze patterns of completion of participants' written responses, I invited the participants to hand in their completed workbooks at the last class, which I copied and returned to them.

Data Analyses

Program Effects

A series of analyses were employed to examine the short-term effects of the reflective program. First, I performed t-tests and ANOVAs to explore differences between the mean AAPI-2 and SRIS subscale scores for the 3 prenatal classes, men and women, education levels, and other socio-demographic characteristics of participants. Second, I used paired sample t-tests to examine differences between the pre and post-program mean scores on the SRIS and AAPI-2 subscales. Third, to explore the hypothesis that participants with low pre-program reflective function would increase the level of their reflective function by the end of the program, I used the median score of 35 on the SRIS *Insight* subscale to divide participants into 2 groups: low reflective function (raw

score < 35; n=9) and high reflective function (raw score≥35; n=16).[4] The *Insight* subscale was chosen because of the similarity of this scale to the construct of reflective function described by Fonagy et al. (1991). Paired sample t-tests were used to compare the change in mean scores on the *Insight* subscale of the 2 reflective function groups, pre and post-program. Fourth, to explore the hypothesis that an increase in reflective function would be associated with an increase in positive attitudes toward children and parenting I used paired sample t-tests to compare the change in mean scores on the AAPI-2 subscales, of the 2 reflective function groups (low and high), pre and post-program. Finally, to examine participants' perceptions of changes in their understanding and knowledge, I calculated mean pre and post-program ratings for each question on the Reflective Parenting Questionnaire, and used t-tests to compare pre and post means.

Program Feasibility

A content analysis of interview transcripts was conducted based on the key interview questions. I read all the transcripts and identified themes, which constituted key points, issues or recommendations that were mentioned by 2 or more interviewees. Additionally, parents' workbook entries were examined to identify trends in completion of questions for each of the 6 emotions: fear, pain, anger, frustration, sadness and loneliness. I calculated frequencies for 3 responses: the number of times participants could remember a specific incident involving each emotion, the number of times they described a response for their

[4] The median score of 35 was chosen as a cut-off based on an observed gap in the distribution of participants' raw scores.

mothers, and the number of times they described a response for their fathers. For the purposes of this study, I did not analyze the contents of the participants' written responses.

Results

Participants

The mean age of the 28 participants was 26.1 years with a range of 17 to 34 years. [5] The majority (89%) reported their race as white. Half (50%) of the participants had a university degree and two-thirds (64%) were employed. Family income was less than $30,000 per year for 14% of the couples, between $30,000 to $60,000 for 46% of the couples, and 36% reported a family income greater than $60,000.

Short-term Effects of the Reflective Parenting Program

Table 3.1 presents the means, standard deviations and t-scores for the 3 subscales of the Self-Reflection and Insight Scale (SRIS), pre and post-program. Scores on the *Engagement* subscale ranged from 14 to 36, on the *Need* subscale from 12 to 31, and on the *Insight* subscale from 25 to 48. Except for the pre-program measurement of the *Need* subscale, which was somewhat negatively skewed, the subscale distributions met normality assumptions.

Findings in Table 3.1 show that although the increase in mean scores was statistically significant for all 3 subscales, the greatest increase was observed for the *Insight* subscale, with a t-score of 2.6 points. And, most of this change can be attributed to an increase in the mean score for 9 participants with low pre-

[5] Although the age criterion for participants was 18 or older, the study included one expectant mother who was 17years old because she was living independently and therefore deemed to be an adult.

program Insight subscale scores (i.e., raw scores<35). Paired sample t-tests revealed that the mean *Insight* subscale score for participants in this group increased from 29 to 35 (t=4.0; p<0.01), whereas there was virtually no change in the mean for the 16 participants with pre-program *Insight* subscale scores of 35 or higher. The lack of change for 16 participants with high pre-program Insight subscale scores suggests the presence of a ceiling effect of the SRIS Insight subscale.

Table 3.1

Means (sd) and t-scores for Self-Reflection and Insight Scale (SRIS) Subscales, Pre- and Post-Program

SRIS Subscales	N	Pre-Program Means *(sd)*	Post-Program Means *(sd)*	T-Score
Engagement in Self Reflection	27	26.2 *(4.7)*	27.3 *(5.6)*	2.07*
Need for Self Reflection	25	25.0 *(4.3)*	26.4 *(3.7)*	2.25*
Insight	25	35.7 *(5.9)*	37.9 *(4.6)*	2.62*

*$p \leq 0.05$

Figure 3.1 uses boxplots to depict the means, standard deviations and ranges of pre and post-program SRIS Insight Subscale scores for 9 participants with low (<35) pre-program scores and 16 participants with high (≥35) pre-program scores.

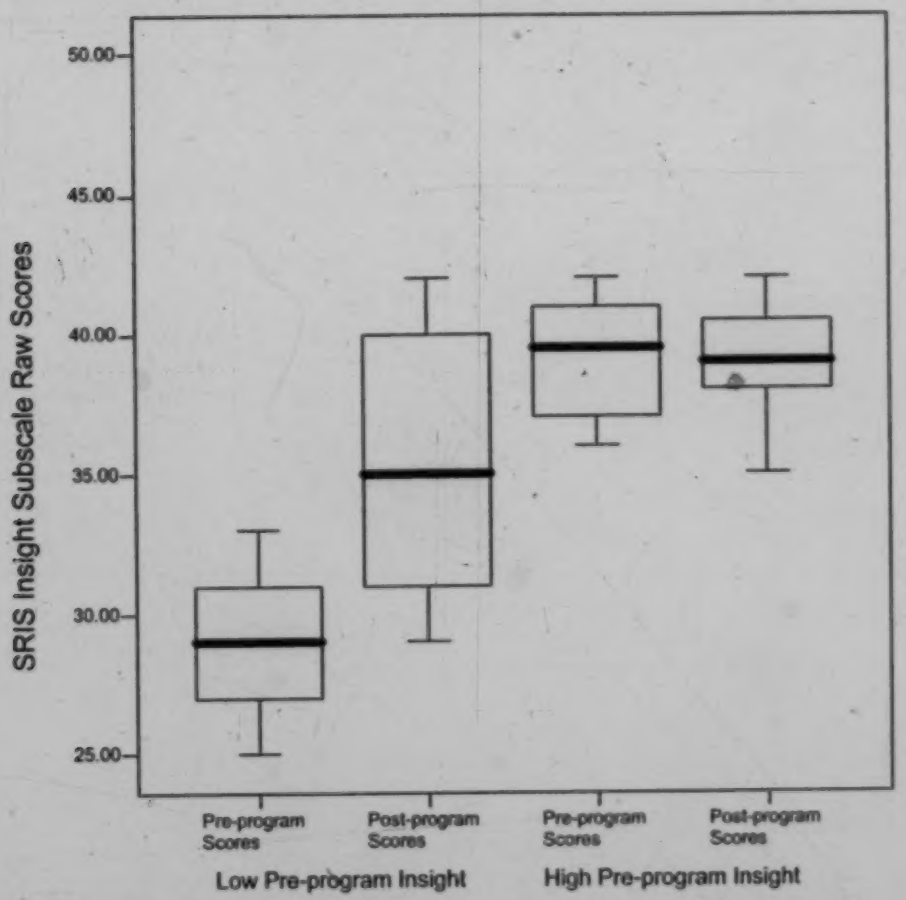

Figure 3.1. Box plots (means, standard deviations and ranges) of SRIS Insight subscale pre and post-program scores for participants with low pre-program insight (n=9) and participants with high pre-program insight (n=16).

In addition to depicting an increase in the mean score for participants who had low pre-program Insight scores, the box plots show an increase in the standard deviation for these participants. The post-program increase in standard deviation suggests that the extent of change in the Insight (i.e., reflective function) of individual participants varied by the end of the 5-week program. This may be explained by the focus of the reflective parenting program on self-

directed learning, in which participants worked independently on their reflective journals at home. This is in contrast to a behavioral training program that is delivered in a consistent manner to all participants, and which may be expected to reduce the variability in post-program scores.

To calculate the effect size (ES) of the reflective program enhancement for the 9 participants with low pre-program insight, I subtracted the pre-program mean from the post-program mean and then divided this number by the pooled standard deviation at baseline (5.9). The effect size of the reflective program was 1.01, which is much higher than the mean effect size (0.37) of 57 parenting intervention programs reviewed by Gray and Halpern (as cited in Barnett, 1997, p.152) thus providing further evidence of the program's effectiveness. In summary, the results of the t-test, boxplot and effect size analyses support the hypothesis that participants with low pre-program reflective function will increase their level of reflective function by the end of the program.

Table 3.2 presents the means, standard deviations and t-scores for the 5 subscales of the Adult Adolescent Parenting Inventory (AAPI-2), pre and post-program. The range of possible scores was 1 to 10. There were statistically significant changes in pre and post-program mean scores for 4 subscales: *appropriate parental expectations of children, empathy for children's needs, supports appropriate family roles,* and *values children's power and independence*. The direction of change for the *empathy for children's needs* subscale was opposite to that hypothesized, whereas the means of the other scales increased after the program, as hypothesized. There was an improvement

in the *values alternatives to corporal punishment* scale, but this was not statistically significant.

Table 3.2

Means (sd) and t-scores for Adult-Adolescent Parenting Inventory (AAPI-2) Subscales, Pre- and Post-Program (n=27)

AAPI-2 Subscales	Pre-Program Means *(sd)*	Post-Program Means *(sd)*	T-Scores
Appropriate expectations of children	6.3 *(1.7)*	7.1 *(1.2)*	3.1**
Empathy for children's needs	5.7 *(1.7)*	4.9 *(2.0)*	3.3**
Values alternatives to corporal punishment	5.3 *(2.1)*	5.9 *(1.1)*	1.6
Supports appropriate family roles	5.5 *(1.9)*	6.9 *(1.6)*	3.5**
Values children's power and independence	6.0 *(2.1)*	6.9 *(2.1)*	2.6*

**$p \leq 0.01$ *$p \leq 0.05$

Findings from ANOVAs indicated that the mean scores for men were significantly higher than women on 2 pre-program scales, *appropriate expectations of children* and *values alternatives to corporal punishment* and 2 post-program scales, *values alternatives to corporal punishment and supports appropriate family roles*. This could be attributed to differences in this sample from that used to develop the norms for the AAPI-2, in which no gender differences were evident. It is possible that men who volunteer to participate in a parenting program, such as the reflective program enhancement, would have more supportive attitudes toward children, than a general sample of men such as those who completed the questionnaires in the norm samples. Additional

ANOVAs indicated that subscale scores did not differ by prenatal group, age, income, employment or education of the participants.

To explore the hypothesis that an increase in reflective function would be associated with an increase in positive attitudes toward children and parenting, I used paired sample t-tests to examine the pre-post AAPI subscale scores of the 5 participants who changed from low to high reflective function. There was a statistically significant increase in the post-program mean score for the *appropriate expectations of children* subscale, and a statistically significant decrease in the post-program mean score for the *empathy for children's needs* subscale. Additionally there were non-significant increases in the three other AAPI subscale mean scores. I completed the same tests with the 4 participants who exhibited low reflective function both pre and post-program and found no significant differences in pre and post AAPI subscale mean scores for this group. The significant increase in the post-program mean score for the *appropriate expectations of children* subscale for the 5 participants who changed from low to high reflective function provides preliminary evidence that an increase in reflective function would be accompanied with a positive change in attitudes toward children and parenting. And, the lack of significant differences in pre and post AAPI subscale scores for the 4 participants with low post-program reflective function suggests that participants need to achieve a certain level of reflective function (i.e., 35 or higher on the Insight subscale) before a corresponding change in attitudes toward children will occur. However, the significant decrease in *empathy for children's needs* subscale scores for the 5 participants who

increased their level of reflective function is contradictory. Further research with a larger sample size is needed to explore these findings, as the small sample size may have contributed to the non-significant findings and the seemingly contradictory findings.

One of the most interesting findings of this study is that participants (n=16) with high pre-program reflective function made statistically significant increases in post-program mean scores for 2 subscales of the AAPI, *appropriate parental expectations of children,* and *supports appropriate family roles.* In contrast, when considered as a group, the mean pre and post-program subscale scores on the AAPI for 9 participants with low pre-program reflective function were not significantly different and for one subscale the mean score actually decreased. The mean score on the *empathy for children's needs* subscale decreased from 5.7 to 4.9 ($t=4.5$; $p<0.01$, $n=9$). Although approaching significance, there was no statistically significant difference in the pre and post-program mean scores on the *values children's power and independence* scale for participants with either low or high pre-program reflective function. However, there was a statistically significant difference for the whole group, indicating an overall positive effect on *values children's power and independence* subscale (see Table 3.2).

In summary, the findings suggest that an increase in positive attitudes or cognitions about children and the parenting role may be related to the level of the reflective function of expectant parents. Participants with a higher level of pre-program reflective function exhibited more significant increases in positive attitudes toward children than participants with low pre-program reflective

function, and participants who changed from low to high reflective function made more significant positive increases in their attitudes toward children by the end of the program than those who maintained a low reflective function level through to post-program.

Table 3.3 presents findings from the analysis of expectant parents' retrospective self-reported change in their understanding of infant emotions, infant attachment, childhood emotions, parent's emotions and parent's behavior. The items on the Reflective Parenting Questionnaire (RPQ) were scored on a 4-point rating scale, and the range for each of the subscales was 1 to 4. The distributions of participant scores met normality assumptions.

Table 3.3

Means (sd) and t-scores for Reflective Parenting Questionnaire (RPQ) Subscales, Pre- and Post-program (n=28)

RPQ Subscales	Pre- Program Means *(sd)*	Post- Program Means *(sd)*	T-Scores
Understanding of:			
Infant Emotions	2.6 *(.69)*	3.5 *(.57)*	6.0**
Infant Attachment	2.6 *(.74)*	3.6 *(.49)*	6.9**
Childhood Emotions	2.9 *(.76)*	3.4 *(.74)*	4.4**
Parent's Emotions	2.7 *(.72)*	3.5 *(.58)*	5.6**
Parent's Behavior	2.9 *(.72)*	3.6 *(.57)*	4.6**

**$p \leq 0.001$

The data reported in Table 3.3 show statistically significant self-reported increases in expectant parents' understanding of 5 areas targeted by the enhanced program. The greatest change was in parents' self-reported understanding of infant emotions and infant attachment, each with approximately

a 1-point increase on a 4-point scale. The results of ANOVAs to examine differences in mean scores by sex, income, education and employment indicated a significant difference for post-program understanding of childhood emotions, based on education level. The mean scores for participants with high school or less education were lower than groups with higher levels of education. This indicated that they thought they learned less than people with higher education thought they learned.

Feasibility of a Reflective Program Enhancement to Prenatal Education

In this section I summarize findings about the feasibility of the reflective program enhancement. Three sources of data were analyzed: nurse interviews, parent interviews and parent journal entries.

Nurse Interviews

During the interviews, the nurses described their perspectives on the program enhancement, and commented on the appropriateness of the written materials (e.g., workbook), the effectiveness of the group activities, strengths and challenges of the pilot program and recommendations for future enhancements. Two nurses said that some parents complained about the time it took to complete the reflective parenting workbook, and these nurses suggested that it be made available as a resource for parents, but not necessarily as assigned homework. All 3 nurses said they found it difficult to incorporate existing course materials into a 5-week program, and said they would require at least 2 additional hours (i.e., an additional evening class) to incorporate parenting activities, such as those used in the reflective parenting enhancement, into a regular sized prenatal

class. All the nurses expressed interest in participating in additional training activities that would enable them to confidently incorporate the group discussion activities into their prenatal classes.

Parent Interviews

Only 4 couples participated in the focus group interviews. Some couples said that although they would have liked to participate, they were unavailable at the times the group interviews were scheduled. Overall, the interview participants did not differ from non-participants in terms of socio-demographic characteristics, or SRIS, AAPI-2 and RPQ mean scores. However, due to the small number of participants (n=8), the interview data from the parents may not represent the perspectives of a majority of participants in the program. Additionally, participants' responses in the group interviews may have been influenced by the researcher's dual role as program facilitator and program evaluator.

Despite these shortcomings, the findings provide preliminary evidence that the program enhancement is a feasible addition to prenatal education. The participants provided both positive and negative comments about the usefulness, timing, and length of activities in the program. Although most participants thought the information component of the workbook was useful, several reported that some sections of the written journal were difficult to complete. They said that emotions were not usually experienced in isolation, but in clusters, such as fear and pain together, and that it was difficult to identify specific incidents from early childhood. A few participants suggested that it would be easier to focus on intense emotional events that may involve several emotions, rather than focus on

specific instances of 1 emotion. Some said that they found it difficult to remember their father's response because he was absent or not the primary caregiver, and several mentioned it was difficult to isolate each parents' (i.e., mothers' versus fathers') responses. Participants suggested that they be given a choice to reflect on the behaviors of 1 parent, or both parents as a team, for each emotional event.

Several of the focus group participants said they found the group discussion component of the program to be beneficial. They said they enjoyed talking with other parents about parenting issues and suggested that more time be provided in prenatal education classes for parenting discussions. Most of the expectant parents who attended the group interviews said that the workbook prompted couple discussion about parenting, and that they found this beneficial. Finally, several said they wanted more information about infant emotional development and strategies for dealing with infant emotions and behavior.

Parent Journals

Twenty parents submitted their written journals for copying at the end of the program. Of the 8 who did not submit their journals, 2 reported that they lost them when they moved, and 6 said that they did not complete the journals. An explanation for non-completion given by 1 expectant mother was that her childhood experiences were too painful, and that she didn't want to think about them. The other 5 said that although they used the journals as the basis of discussions with their partners, they did not have time to complete the written sections.

Patterns of completion were analyzed for the 20 journals that were submitted. Table 3.4 presents the number and percentage of participants who identified a specific incident, identified their mother's response, and identified their father's response, for each of 6 childhood emotions that were targeted by the written journals.

Table 3.4

Number and Percentage of Participants who Identified a Specific Incident, Mother's Response, and Father's Response to Six Childhood Emotions (n=20)

Childhood Emotion	Identified A Specific Incident N (%)	Identified Mother's Response N (%)	Identified Father's Response N (%)
Fear	16 (80)	13 (65)	11 (55)
Pain	20 (100)	19 (95)	16 (80)
Anger	12 (60)	13 (65)	11 (55)
Frustration	10 (50)	8 (40)	7 (35)
Sadness	15 (75)	12 (60)	10 (50)
Loneliness	7 (35)	5 (25)	3 (15)

All of the participants who completed their journals could remember a specific incident about pain, and a majority could remember an incident about fear (80%), anger (60%) and sadness (75%). However, only 50% of participants could recall an incident involving frustration and only 35% recalled an incident involving loneliness. It is difficult to determine whether frustration and loneliness were more difficult to remember, or if they were experienced less frequently overall. Participants wrote about their mothers' responses more often than their fathers'. This pattern supports comments made by participants in the group interviews that their mother was the primary caregiver. Approximately 25% of

participants who identified their fathers' response wrote that it was "*the same as my mother's*", which supported the observation made by some group interview participants that their mother and father acted as a team. The analysis of the frequencies of participants' written responses supports the recommendation made by group interview participants that the journal component of the reflective workbook be modified (i.e., give participants the opportunity to reflect on mothers and fathers as a unit, rather than separately).

In summary, the 3 nurses and 8 parents who participated in the group interviews supported the addition of reflective activities to prenatal education. However, several changes are indicated based on the nurses' and participants' perceptions of the workbook and group discussion activities, and based on analysis of patterns of completion in the journal.

Discussion and Implications

In this section I present the key findings from the evaluation of a reflective parenting enhancement to a 5-week prenatal education program. Then, I describe aspects of my research design and methodology that may limit the implications of the results for attachment theory and for the development of attachment interventions. Finally, I describe implications for attachment theory and provide recommendations for future studies of attachment interventions.

Key Findings

One key finding was that participants with low pre-program reflective function (i.e., lack of self-reported understanding of the mental states underlying their own behavior) significantly increased the level of their reflective function by

the end of the 5-week enhanced prenatal program, as hypothesized. The mean *SRIS Insight* subscale score for 9 participants with low pre-program scores, changed from 29 to 35 ($t=4.0$; $p<0.01$). And, 5 of the 9 participants with low pre-program reflective function attained a high level of reflective function (i.e. a score of 35 or greater on the *SRIS Insight* subscale) by the end of the 5-week program.

A second key finding was that participants with high pre-program reflective function (n=16) and those who changed from low to high reflective function (n=5) made positive changes in their attitudes toward children and parenting, as measured by the *AAPI-2* subscales, at the end of the 5-week program. And, there were statistically significant increases in participants' self-reported understanding of 5 topics targeted by the enhanced program: *infant emotions, infant attachment, childhood emotions, parents' emotions and parents' behavior.* Although these results suggest that a carefully implemented program enhancement may have the potential to facilitate expectant parents' cognitions associated with secure infant attachment, they must be viewed cautiously in view of two limitations that I describe below.

Limitations of the Study

Research Design

As this was the evaluation of a pilot program, a major limitation of this study was the lack of a comparison or control group. There were no significant differences in outcomes across the 3 classes, suggesting that the enhancement may have contributed to the changes in participants' reflective function. However, the 3 nurse educators covered similar prenatal curricula, and these curricula also

may have had some influence on the outcomes. Also, there may be variables unknown to the researcher that contributed to post-program increases in reflective function and positive attitudes toward children and parenting. For example, the participants who volunteered for this study may have already been engaged in reading and reflecting about family of origin experiences. Therefore it cannot be concluded with complete confidence that the results were due solely to the reflective parenting enhancement. And, it cannot be determined if the changes in reflective function or in self-reported knowledge of infant emotions and infant attachment were due primarily to the reflective parenting workbook, the group discussions, or a combination of the 2 activities. Future studies could include a matched control group to better determine differential effects of the prenatal program curricula and the activities used in this reflective program enhancement.

Another limitation of the study is that the program was only 5 weeks in duration. Therefore, the practical significance of the results (i.e., effects of cognitive changes on subsequent infant attachment outcomes) are not known. A longer-term follow-up study is indicated that would examine whether changes in reflective function correspond with changes in parents' cognitions about children and parenting over time, and with infant attachment security outcomes.

Finally, the small sample limits generalization of the results to a larger sample. In this study only 9 participants exhibited low reflective function, and it will be important to examine the effects of a reflective parenting program on a larger group in order to draw definitive conclusions about effects.

Methods

Although I had originally planned to use interview methods to measure pre and post-program effects, the decision to use self-report instruments was driven by the need to use methods better suited to a short-term community-based intervention and which had demonstrated test-retest reliability. Therefore, implications of the findings for attachment theory need to be drawn with caution. The *SRIS Insight* subscale uses a paper and pencil self-report instrument to explore parents' understanding of the mental states underlying behaviors whereas Fonagy et al.'s (1991) Reflective Function scale involves experimenter analysis of parents' verbal responses to several questions about family of origin experiences. As well, the AAPI-2 uses a paper and pencil self-report instrument to measure attitudes about children and parenting whereas George and Solomon's (1996) and Benoit et al.'s (1997) measures of caregiving representation are based on experimenter analysis of parents' understanding of their children's needs, motivations and behaviors. The self-report measurements may be less sensitive in detecting differences in parents' *actual* ability to understand their own or their children's mental states than would the interview measurements.

Implications for Attachment Theory

Despite the limitations described above, the results do have some implications for future attachment research. The findings indicated that parents with a high level of self-reported understanding of mental states, a construct similar to Fonagy's *high reflective function* construct, were more likely to change

their cognitions about children and parenting as a result of a parenting intervention. The ability of parents to change their attitudes toward children is conceptually similar to *openness to change in parenting approaches,* an aspect of caregiving representation associated with *secure* infant attachment (George & Solomon, 1996; 1999). These findings point to the possibility that reflective function may precede cognitive flexibility. Future research could use established interview methods (i.e., AAI and PDI) to determine if parents' level of reflective function predicts flexibility in caregiving attitudes, and whether flexibility in attitudes in turn predicts parents' sensitivity and infant attachment security. Such studies would make a significant contribution to the development of attachment theoretical models.

The present study provides some support for the use of a self-report instrument to assess reflective function. Past research has indicated that the *Insight* subscale predicts the ability of clients to make change as a result of a therapeutic program (Grant et al., 2002), and the results of this study provide further evidence of the predictive validity of this SRIS subscale. These findings, combined with previous evidence of the validity and reliability of the SRIS, indicate that future studies of the association of the Self-reflection and Insight (SRIS) subscales with Fonagy et al.'s reflective function scale are warranted in order to ascertain whether this instrument may be a useful method for future attachment research.

Implications for Attachment Interventions

The results suggest that a focused and carefully managed cognitive attachment-based program enhancement has the potential to impact parents' cognitions associated with secure infant attachment. Participants with low pre-program reflective function (i.e., lack of self-reported understanding of the mental states underlying their own behavior) significantly increased the level of their reflective function by the end of the 5-week enhanced prenatal program. Additionally, a majority of participants reported significant increases in their knowledge of infant emotional development and attachment, and the parents who participated in the follow-up group interview indicated that they found the information provided in the workbook (i.e., about infant development) very useful. Therefore, the findings provide preliminary evidence that a reflective enhancement to prenatal education warrants further consideration for inclusion in prenatal classes. Although interviews with the nurses and some of the expectant parents suggest the need for an additional 2-hour class to incorporate parenting discussions, overall the program required minimal adaptations. It seems that the benefits may outweigh the costs of incorporating such an enhancement in prenatal education classes and this could be investigated in future studies.

However, there are several recommendations for the development of future studies of attachment cognitive interventions based on the results of this study. First, future studies focused on parents' reflective function should include a control group and use established attachment instruments in order to increase the implications for attachment theory and interventions. Second, it will be

important to examine the long-term impact of cognitive program enhancements on parents' interactions with their children to determine the practical significance of any cognitive changes. Third, the sample for this study consisted primarily of well-educated, employed, middle-income couples; therefore the results have limited generalizability to expectant parents with low socio-economic status or education levels, or to single parent families. It will be important to repeat the study with a larger, more heterogeneous sample, including single mothers, and parents with low socio-economic status and education levels. For example, there was some evidence that level of education affected participants' post-program understanding of childhood emotions. A reflective parenting program, such as that developed for this study, may not be as effective with participants who have limited education.

Finally, there was one other interesting finding that may have implications for the development of future cognitive attachment-based interventions. Change in reflective function was associated with increases in participants' positive attitudes toward children and parenting as hypothesized, but only for those 5 participants who changed from low to high reflective function, and only for one AAPI subscale. This finding suggests the possibility that a certain level of reflective function must be reached before parents will change their attitudes toward children and parenting, and that some attitudes are more susceptible to change than others. However, these findings may be a manifestation of the small sample, a limitation that was identified above, and therefore must be viewed with caution. It does however suggest an interesting direction for further study.

Concluding Comments

As I conducted this pilot study I learned that community health nurses are inundated with demands to cover additional material in their prenatal classes. Most of this material focuses on preventing injury or death of infants (Community Health Services, 2001). Although the effect of *insecure* attachment is not as dramatic as shaken baby or sudden infant death syndrome, 3 decades of research suggest that the long-term consequences of *insecure* infant attachment for our health care system, education system, and communities are significant (Weinfield, Sroufe, Egeland, & Carlson, 1999). The results of this evaluation study suggest that a relatively simple parenting enhancement to prenatal education has the potential to impact parents' reflective function, a cognition associated with infant attachment security. The longer-term impact of such enhancements could be explored in future research to ascertain the benefits for infant attachment and later childhood development.

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CHAPTER 4

REFLECTIVE FUNCTION AND CAREGIVING REPRESENTATIONS OF EXPECTANT PARENTS

Introduction

Numerous studies over the past 30 years have confirmed that patterns of attachment security, assessed when an infant is approximately 12 months of age, predict later social and emotional adjustment (for reviews see Thompson, 1999; Weinfield, Sroufe, Egeland, & Carlson, 1999). The major finding of this body of research is that infants who exhibit *insecure* attachment (i.e., avoid the parent or show combinations of resistance, anger and distress when under stress) are at higher risk of developing social and emotional difficulties in later childhood than are *secure* infants (i.e., use the parent as a base from which to explore a new setting, and seek proximity to their parent when under stress). Approximately 35-40% of infants in the general population exhibit *insecure* attachment at 12 months of age (Ainsworth, Blehar, Waters and Wall, 1978; Hesse, 1999). This relatively high incidence of infants who are *insecure*ly attached, in combination with the negative developmental consequences of *insecure* attachment (for reviews see Thompson, 1999; Weinfield et al., 1999), makes the development of interventions focused on facilitating *secure* infant attachment important.

A major assumption of attachment theory is that early parent-child interaction is the major influence on infant attachment security. Accordingly, most attachment interventions target mothers soon after the birth of their first child,

and tend to be focused on parents' interaction with their baby (Bakersmans-Kranenburg, Juffer, & van IJzendoorn, 1998; Erikson, Korfmacher, & Egeland, 1992; Juffer, van IJzendoorn, & Bakermans-Kranenburg; Niccols, 2000; Stams, Juffer, & van IJzendoorn, 2001; van IJzendoorn, Juffer, & Duyvesteyn, 1995). These types of behavior-focused programs have been only moderately successful (for a review, see van IJzendoorn et al., 1995). In addition, evidence that cognitions of expectant parents predict infant attachment security (Benoit, Parker, & Zeanah, 1997; Fonagy, Steele, Steele, Moran, & Higgitt, 1991; George & Solomon, 1996) suggests that programs should be developed that target parents' cognitions before the birth of their first child.

A cognition of expectant parents that has been significantly associated with *secure* infant attachment is reflective function (Fonagy et al., 1991), which is defined as the "*capacity to reason about one's own and other's behavior in terms of mental states*" (Fonagy, Target, Steele, & Steele, 1998, p.7). Fonagy et al. (1991) proposed that reflective function impacts infant attachment indirectly, through cognitions about children, but this relationship has not yet been explored.

Benoit et al. (1997) and George and Solomon (1996, 1999) have studied parents' cognitions about children and about the parenting role, which they call 'internal working model of the child' and 'caregiving representation' respectively. Parents' cognitions about children and the parenting role that have been associated with *secure* infant attachment include *empathy for the child's perspective, openness to change in parenting approaches, acceptance of the child,* and *positive perceptions of the child* (Benoit et al., 1997; George &

Solomon, 1996). Based on these findings and on the work of Fonagy et al. (1991), I propose that expectant parents' reflective function predicts cognitions about children and the parenting role associated with *secure* infant attachment. The present study explored this association between reflective function and caregiving representations with a sample of 71 expectant mothers and fathers. Prior to discussing methods and findings, I provide an overview of the theoretical and empirical foundation for the study. I conclude with a discussion of the implications that the study has for theory, future research and practice.

Theoretical and Empirical Foundations

Parents' Reflective Function

Reflective function is an aspect of adult attachment representation significantly correlated with *secure* infant attachment outcomes (Fonagy et al., 1991). Adult attachment representation refers to an adult's current 'state of mind' with respect to his or her own attachment experiences (Hesse, 1999). It is assessed using the Adult Attachment Interview (AAI; Main & Goldwyn, 1984a), a semi-structured, hour-long protocol consisting of 18 questions about participants' relationship with their parents. AAI interviews are classified into 1of 4 attachment categories that parallel infant attachment categories: *secure, insecure-avoidant, insecure-preoccupied,* and *insecure-unresolved*. Each of the 4 AAI classifications is associated with specific 9-point scales. The 3 scales associated with *secure* adult attachment representation include metacognitive monitoring, coherence of transcript, and reflective function (Hesse, 1999). The *metacognitive monitoring* scale rates the ability of the speaker to identify inconsistencies or contradictions

in his or her narrative. A high level of *metacognitive monitoring* is characterized by comments that indicate the speaker is aware of and monitors his or her thoughts. The *coherence of transcript* scale is used to rate a subject's flow of speech, including ease of conversation and consistency of narrative. This scale recognizes that what a speaker says is not as important as how it is said. The *reflective function* scale, which rates a participant's ability to reason about the mental states underlying his or her own and other's behavior, is currently being tested and modified, and has not formally been added to the AAI protocol (Hesse, 1999). However, a landmark study completed by Fonagy et al. (1991) suggests that parents' reflective function is a more important precursor of infant attachment security than the other 2 scales, and this study is detailed below.

Fonagy et al. (1991) developed the *reflective function scale* to rate the capacity of adults to reason about their own and their parents' behavior in terms of mental states. They tested the scale with a sample of 100 expectant mothers and their male partners. A low rating was given to subjects who were unwilling or unable to reflect on the mental states underlying their own childhood behaviors, or those of their parents. These subjects used platitudes, generalizations or banal statements to describe the motivations underlying their parents' or their own behavior. High ratings were given to subjects who seemed able to understand and to separate the psychological states, motivations and emotions underlying their behavior as children from the states, motivations and emotions underlying their parents' behavior. Results demonstrated a strong correspondence between the reflective function of expectant parents and

subsequent infant attachment (r= .51 and .36 for mothers and fathers respectively). Expectant parents with a high level of reflective function were more likely than parents with a low level of reflective function to have *securely* attached infants.

The significance of Fonagy et al.'s (1991) study is that it demonstrated a stronger relationship between scores on the *reflective function scale* and infant attachment, than what had been observed between categorical descriptions of adult attachment (i.e., secure and insecure) and infant attachment. Also, *reflective function* scores were more strongly correlated with infant attachment than were scores on the *metacognition* and *coherence* scales. Fonagy et al. (1991) argued that the *reflective function* construct may encompass both *metacognition* and *coherence of transcript* constructs, and proposed that parents' *reflective function* impacts infant attachment through parents' cognitions about infant mental states (i.e. recognition and understanding of the mental states that underlie their infants' behaviors). However, this proposed relationship has not yet been fully explored. Further elaboration of the relationship between cognitions about family of origin experiences and cognitions about children and parents comes from the work of George and Solomon (1996, 1999) on caregiving representation.

Caregiving Representation

George and Solomon (1996, 1999) postulated that caregiving representation consists of the adults' views or perceptions of themselves as parents, of their child, and of their relationship with their child, and is a mature

transformation of adult attachment representation (i.e., views of self as child). They developed four 7-point scales to classify parent's narratives about their relationship with their child into 1 of 4 caregiving representation categories: secure, rejection, uncertain, and helpless. The *secure base* scale is used predominantly to identify the *secure* caregiving representation category and is described in detail below.

Secure Base Scale

The *secure base* scale measures several dimensions: the degree to which a parent values and is committed to the caregiving role; a parent's self-reported flexibility in responding to the child; self-reported understanding of the child's perspective; and positive views of the child. A high score is given if the parent says they value the caregiving role and are committed to it, if the parent describes flexible responses to his or her child, if the parent says they understand the child's perspective, and if the parent is generally positive about his or her child. George and Solomon (1996) found a significant positive relationship between *secure base* scores, *secure* adult attachment representation and *secure* child attachment in a study of 32 mothers and their kindergarten-aged children. Benoit et al. (1997) conducted a similar study in which they classified the caregiving representations of expectant parents into 3 categories. The category associated with *secure* infant attachment (i.e., 'balanced') is described in the next section.

Balanced Classification

Using an interview approach similar to that of George and Solomon (1996), Benoit et al. (1997) assessed 96 expectant mothers' representations or cognitions about their child. They classified mothers' representations into 1 of 3 categories: balanced, disengaged and distorted. *Balanced* transcripts reflected an "empathic appreciation for the infant's subjective experience", "acceptance and respect for the infant's individuality, and "a sense of being engrossed in the relationship with the infant" (Benoit, 1996, p.2). The *balanced* category was strongly associated with infant attachment *security,* both for representations assessed prenatally (74% concordance between secure-secure categories) and those assessed 1 year later (73% concordance).

These two studies provide evidence that cognitions about children and parenting are important influences on infant attachment, and that these cognitions are influenced by cognitions about family of origin experiences (i.e., adult attachment representation). Because of the implications for attachment interventions, the present study examined the influence of reflective function, an important aspect of adult attachment representation (Fonagy, et al., 1991), on caregiving representations associated with *secure* infant attachment.

Purpose and Hypotheses of the Study

This study examined the association between reflective function (i.e., understanding of the mental states underlying ones' behavior) and caregiving representations (i.e., cognitions about children and parenting) that are associated with *secure* infant attachment. First, I hypothesized that reflective function would

be positively correlated with 5 attitudes toward children and parenting: *appropriate expectations of children, empathy for children's perspectives, value alternatives to corporal punishment, value and commitment to the parenting role, and respect children's independence.* Second, I hypothesized that participants with a high level of reflective function would demonstrate more positive attitudes about children and parenting, than participants with a lower level of reflective function. Third, based on the work of Benoit et al. (1997) who found no relation of age, education or income level to the caregiving representation categories of 96 expectant mothers, I also hypothesized that parents' attitudes toward children and parenting would be independent of socio-demographic characteristics.

Methods

Recruitment

The focus of the study was couples who were married or cohabiting, were over 18 years of age, were in their last trimester of pregnancy, and who had no other children. A total of 71 expectant parents who were registered in prenatal education classes in the Capital Health region in Edmonton, between January and June 2004, volunteered to participate in the study. Twenty-seven (27) had participated in the reflective parenting study described in Chapter 3 of this dissertation. An additional 44 participants were recruited from 4 other prenatal classes with a combined enrollment of 120 expectant parents, for a response rate of 37%. (See Appendices E1 and E2 for copies of the Parent Information Sheet and Parent Consent forms.)

Data Collection

Participants individually completed 3 paper and pencil questionnaires at the first prenatal class. These included a measure of reflective function (Self-Reflection and Insight Scale (SRIS)), a measure of parent attitudes toward children and the parenting role (Adult-Adolescent Parenting Inventory (AAPI-2) Form A), and a questionnaire about socio-demographic characteristics (Demographic Questionnaire). The instruments, which took 15-20 minutes to complete, are described in detail in Chapter 3.

Data Analysis

The means, standard deviations and distribution of subscale scores on the SRIS and AAPI-2 were calculated. Pre-program measurements for participants in the reflective parenting enhanced program (see Chapter 3) were used for the analysis. To examine the hypothesized association between reflective function and cognitions about children and the parenting role, Pearson product-moment correlations between the scaled scores for 3 SRIS subscales and the standardized (sten) scores for 5 AAPI-2 subscales were completed. T-tests and ANOVAs were performed to examine differences between the mean SRIS and AAPI-2 scores for the 2 groups of participants (i.e., reflective parenting program group versus general group), for men versus women, high versus low education level, and other socio-demographic characteristics. Then, the sten scores for the AAPI-2 subscales (dependent variables) were regressed on the predictors (independent variables): reflective function (SRIS scaled scores), age, education level (1=high school or less, 2=some post-secondary completed, 3=post-

secondary degree or diploma completed, 4=bachelor's degree, 5=professional or graduate degree), income (1=0-$30,000, 2=$30,000-60,000, 3=greater than $60,000), and gender (1=Male, 2=Female).

To examine differences in AAPI-2 subscales for participants with high and low levels of reflective function, the sample was divided into 2 groups (i.e., high and low reflective function) based on the raw scores on the *Insight* subscale. The *Insight* subscale was chosen because of the similarity of this subscale to the construct of reflective function described by Fonagy and his colleagues (1991). A median score of 35 on the *Insight* subscale was used to divide participants into 2 categories: low reflective function (raw score < 35 and high reflective function (raw score≥35).[6]

Results

Participants

The sample consisted of 36 men and 35 women, with a mean age of 26 years (range=17 to 40 years).[7] The majority reported their race as white (92%), and most (70%) indicated that they had post-secondary education. Only 19% of the sample reported their family income to be less than $30,000 per year, 22% reported income between $30,000 and $60,000, and 59% reported their income to be greater than $60,000 per year.

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[6] The median score of 35 was chosen as a cut-off based on an observed gap in the distribution of participants' raw scores.

[7] Although the age criteria for participants was 18 or older, the study included one expectant mother who was 17 years old because she was living independently and therefore deemed to be an adult.

Subscale Means and Distributions

Table 4.1 presents the mean scores and ranges for the 3 subscales of the Self-reflection and Insight Scale (SRIS). The possible range of mean scores for the *Engagement in self-reflection* and *Need for self-reflection* subscales is 6-36, and the possible range of scores for the *Insight* subscale is 8-48.

Table 4.1

Means (sd) and Range (minimum, maximum) for Self-Reflection and Insight Scale (SRIS) Subscales

SRIS Subscales	N	Means *(sd)*	Minimum	Maximum
Engagement in Self Reflection	70	26.2 *(5.4)*	12.0	34.0
Need for Self Reflection	68	25.0 *(3.9)*	12.0	31.0
Insight	66	36.4 *(5.3)*	25.0	48.0

The means for the *Need* and *Engagement* subscales were equivalent to that reported for the normative sample. In contrast, the mean for the *Insight* subscale (i.e., 36.4) was higher than the mean of 25.6 reported by Grant, Franklin, and Langford (2002). This may be due to socio-demographic differences between the 2 samples. Grant et al. used a convenience sample of university students, whereas the participants in this study consisted primarily of working adults, many of whom had completed post-secondary education, and all of whom were expecting their first child. These differences may have contributed to a higher mean score on the *Insight* subscale. The results of ANOVAs comparing SRIS mean scores by prenatal group (i.e., reflective parenting

program participants versus the general prenatal class participants), sex, income, education and age revealed no statistically significant differences.

Table 4.2 presents the means and distribution of the standardized (sten) scores for the Adult-Adolescent Parenting Inventory (AAPI-2). The possible range of sten scores is 1-10.

Table 4.2

Means (sd) and Percentage (n) of Standardized (sten) Scores for Adult-Adolescent Parenting Inventory (AAPI-2) Subscales (n=71)

AAPI-2 Subscales	Means *(sd)*	Low Sten Scores (1-4) *% (n)*	Mid Sten Scores (5-6) *% (n)*	High Sten Scores (7-10) *% (n)*
Appropriate expectations of children	6.2 *(1.6)*	14 *(10)*	51 *(36)*	35 *(25)*
Empathy for children's needs	5.6 *(1.6)*	25 *(18)*	45 *(32)*	30 *(21)*
Values alternatives to corporal punishment	4.9 *(2.1)*	44 *(31)*	31 *(22)*	25 *(18)*
Supports appropriate family roles	5.7 *(1.7)*	24 *(17)*	32 *(30)*	44 *(24)*
Values children's power and independence	6.0 *(1.9)*	23 *(16)*	39 *(28)*	38 *(27)*

Bavolek and Keene (1999) identified 3 categories of sten scores (i.e., low, mid, and high) that differentiated parenting behavior. Generally, higher sten scores (i.e., 5-10) reflect more positive attitudes toward children and parenting, whereas low sten scores (i.e. 1-4) are associated with abusive parenting practices (Bavolek & Keene, 1999). The distribution of the sample within 3 categories is described in Table 4.2.

Overall, the group means are at or above the average score (i.e., standardized scores of 5 or greater). However, the mean sten score value for the *values alternatives to corporal punishment subscale* is approximately 1 point lower than each of the other subscales. Examination of the scores for this scale shows that a relatively large proportion (44%) of the sample has low sten scores, indicating they do not value alternatives to corporal punishment. As well, approximately one-quarter of participants had low sten scores for each of 3 other subscales: *empathy for children's needs, supports appropriate family roles,* and *values children's power and independence*. ANOVAs indicated no significant differences between AAPI-2 mean scores for the reflective parenting program participants and the general prenatal class participants, for men versus women, for different income and education levels and by age.

Subscale Correlations

Table 4.3 presents the results of Pearson-product moment correlations between the AAPI-2 and SRIS subscales. Several of the AAPI-2 subscales were correlated with each other, which was predicted by previous studies of their association (Bavolek & Keene, 1999). The *Need* and *Engage* subscales were significantly correlated ($r=.72$, $p<.01$). This finding is similar to that of Grant et al. (2002) who reported a high correlation of the *Need* and *Engage* subscales. The *Insight* subscale did not significantly correlate with either the *Need* or *Engage* subscales, a finding that was also reported by Grant et al. (2002).

Table 4.3

Pearson Correlations between Adult Adolescent Parenting Inventory (AAPI-2) Subscales and Self-Reflection and Insight (SRIS) Subscales

	A	B	C	D	E	Engage	Need	Insight
Appropriate expectations of children (A)	-	**.55****	**.59****	**.24***	.23	.02	-.01	.12
Empathy for children's needs (B)		-	**.44****	**.48****	**.37****	.07	.09	.18
Values alternatives to corporal punishment (C)			-	.16	.19	**.30***	**.33****	.17
Supports appropriate family roles (D)				-	**.29***	.04	.04	.07
Values children's power and independence (E)					-	.08	.18	.04
Engage						-	**.72****	.18
Need							-	.08
Insight								-

**p<0.01 *p<0.05

Only 1 AAPI-2 subscale, *values alternatives to corporal punishment subscale,* was correlated with SRIS subscales, specifically, the *Need for reflection* and *Engage in reflection* scales. This correlation suggests that expectant parents who engage in self-reflection are more likely to value alternatives to corporal punishment than parents who do not engage in self-reflection. Importantly, the *Insight* subscale did not correlate with any of the AAPI-2 subscales. Thus, the results do not provide support for the hypothesis

that reflective function is positively associated with positive attitudes toward children.

Cross-tabulations of AAPI-2 and SRIS Subscales

Table 4.4 presents cross tabulations of Adult-Adolescent Parenting Inventory (AAPI-2) subscales standardized scores (high and low) with Self Reflection and Insight (SRIS) insight subscale scores (high and low).

Table 4.4

Cross-tabulations of Adult-adolescent Parenting Inventory (AAPI-2) Subscales standardized (sten) scores (high and low) with Self Reflection and Insight (SRIS) Insight Subscale Scores (high and low) (n=66)

AAPI-2 Subscales Scores	High Insight N *(%)*	Low Insight N *(%)*
Appropriate expectations of children		
Low	6 *(10)*	4 *(6)*
High	35 *(53)*	21 *(32)*
Empathy for children's needs		
Low	10 *(16)*	7 *(11)*
High	31 *(47)*	18 *(27)*
Values alternatives to corporal punishment		
Low	15 *(23)*	12 *(18)*
High	26 *(40)*	13 *(20)*
Supports appropriate family roles		
Low	7 *(11)*	9 *(14)*
High	18 *(27)*	32 *(48)*
Values children's power and independence		
Low	9 *(14)*	6 *(10)*
High	32 *(48)*	13 *(20)*

A median score of 35 on the *Insight* subscale was used to divide participants (n=66) into 2 categories: low reflective function (raw score < 35; n=25; 38%) and high reflective function (raw score≥35; n=41; 62%). High AAPI-2

subscales scores refer to sten scores of 5 or greater and *low* scores refer to sten scores of 4 or less.

Cross-tabulations were completed to examine the hypothesis that participants with a high level of reflective function, as measured using the SRIS Insight subscale, would demonstrate significantly higher scores on the AAPI-2 subscales, than participants with lower scores on the AAPI-2 subscales. The results of chi square analyses indicated no significant differences in low or high AAPI-2 scores based on the level of reflective function; therefore the hypothesis was not supported.

Regression Analyses

The results of regression analyses for 6 independent variables predicting attitudes toward children and the parenting role (i.e., need for reflection[8], insight, age, income, education, and gender) revealed no statistically significant relationships. Both the zero order correlation and regression results indicated that the independent variables explored in this study do not predict parents' attitudes toward children, as measured by the AAPI-2.

Discussion and Implications

The key finding of this study was that no significant relationship was found between parents' reflective function, as measured by the *Insight* subscale of the Self Reflection and Insight Scale (SRIS) and parents' attitudes toward children and parenting, as measured using the Adult Adolescent Parenting Inventory (AAPI-2) subscales. Although methodological concerns limit the implications of

[8] Note: Because the *Need and Engage* subscales of the SRIS are multicollinear, only the *Need* subscale was included in the regression analyses.

this study for attachment theory, the observed trends in expectant parents' attitudes about children and parenting have several implications for the development of parenting interventions for expectant parents, including attachment interventions. In this section I describe implications of the findings of this study for attachment theory and research, and for interventions with expectant parents.

Implications for Attachment Theory and Research

Although the results of this study did not support the hypothesis that expectant parents' reflective function (i.e., the understanding of the relationship between mental states and behaviors) is positively correlated with caregiving representations associated with secure infant attachment, the implications for attachment theory are limited by methodological concerns related to the use of self-report instruments. The lack of association between reflective function and cognitions about children and parenting may be due, in part, to the choice of instruments. It is possible that the self-report questionnaires used in this study (i.e., SRIS, AAPI-2) were not as effective or measured different constructs than Fonagy et al.'s reflective function scale, and George and Solomon's (1996) and Benoit et al.'s (1997) caregiving representation measurements. Construct validity could be examined in future studies that compare participants' scores on the AAPI-2 with Benoit et al.'s (1997) Working Model of the Child interview, or George and Solomon's (1996) caregiving interview. And, the scores on the SRIS *Insight* subscale could be compared with Fonagy's *reflective function* scale scores. This would provide further information about the relevance of this study

to attachment theory. Additionally, the relationships of SRIS and AAPI-2 subscales to infant attachment are unknown, and could be explored in future studies to determine if subscale scores are associated with infant attachment outcomes.

Despite some methodological concerns, the results of this study suggest that the SRIS *Insight* subscale shows promise for future studies of the association between parents' reflective function and parents' cognitions about children and parenting. Past research has indicated that the *Insight* subscale, which measures an individual's self-reported understanding of the connection between his or her mental states and behavior, is correlated with cognitive flexibility and self-regulation (Grant et al., 2002). Therefore, while I did not find that the *Insight* subscale was correlated in this study with parents' attitudes toward children and parenting, the *Insight* subscale may predict the ability of parents to seek new information about children and parenting, and to adapt to the changing needs of their infant. A future study could examine the relationship between the SRIS *Insight* subscale and *change* in cognitions about children and the parenting role that occur as a result of an attachment-related intervention.

Both zero order correlation and regression results indicated that 4 other independent socio-demographic characteristics (i.e., age, income, education, gender) did not predict parents' attitudes toward children, as measured by the subscales of the AAPI-2. These findings are consistent with those of Benoit et al. (1997), who found that age, income, and education were not related to the caregiving representation categories of expectant parents. However, my study

and the study by Benoit et al. involved largely homogeneous middle income, educated samples. Hence, there is a need to examine relationships between reflective function and caregiving representation with a more heterogeneous sample.

Another limitation of this study is that it did not examine the effects of other contextual processes on reflective function and caregiving representation. George and Solomon (1996, 1999) proposed that contextual processes such as childhood experiences, marital quality and social support systems affect the development of caregiving representation. A recent study by Huth-Bocks, Levendosky, Bogat, and von Eye (2004) examined the effects of several contextual variables on 206 expectant mothers' caregiving representation and on infant attachment outcomes. They found that risk factors, including poverty, single parenthood and domestic violence *"were significantly related to prenatal representations of caregiving, with more risk related to less secure representations"* (p. 492). They also reported a significant influence of childhood attachment experiences on caregiving representation. Huth-Bocks et al.'s findings suggest that contextual factors are important predictors of caregiving representation, and future studies of the determinants of cognitions (i.e., caregiving representations) of expectant parents toward children and parenting, should examine the individual and cumulative effects of contextual factors such as childhood experiences, socio-economic status, marital quality, and social support.

Implications for Interventions with Expectant Parents

Although the results did not support hypotheses about the relationship between reflective function and caregiving representations, the findings do provide descriptive data about the cognitions of expectant parents and indicate areas on which prenatal and other parenting courses could focus. Thirty eight percent (38%) of the participants in this study presented with a relatively low score (i.e., less than the median of 35) on the *Insight* subscale of the SRIS. According to Grant and his colleagues (2002), the *Insight* subscale is associated with the ability of participants to change their attitudes and behavior. Low *Insight* scores have been associated with resistance to change in a therapeutic intervention program. Therefore, expectant parents with low *Insight* scores may be resistant to changing negative child-rearing attitudes, even when provided with information and support to do so. Given the incidence of expectant parents with low *Insight* scores (i.e., 38%) in this study, the implication is that prenatal parenting programs should not only target the development of positive cognitions toward children and the parenting role, but also focus on the insight of expectant parents into their own mental states and behavior.

Another key finding was that although the majority (i.e., 56%) of the participants valued alternatives to corporal punishment, as indicated by moderate to high AAPI-2 sten scores for that subscale, many (44%) did not. Given evidence that spanking a child before the age of 2 is correlated with *insecure* infant attachment outcomes (Coyl, Roggman, & Newland, 2002), these results suggest that it is probably worthwhile for prenatal education programs to

incorporate information about alternatives to corporal punishment for infants and toddlers.

Concluding Comments

Attachment theory and research is a rich and complex field of study. Several instruments have been developed to measure constructs such as adult attachment representation (Main & Goldwyn, 1984a), caregiving representation (Benoit et al., 1997; George & Solomon, 1996, 1999) and infant attachment (Ainsworth et al., 1978). Most of these instruments require intensive training to learn, hours to administer, and a team of researchers to analyze, and consequently most attachment research is conducted in large research laboratories. Due to the limited resources available for the present study, I used self-report instruments to measure reflective function and caregiving representations, which are usually measured with in-depth interviews. Thus, it is possible that these instruments contributed to the lack of association between reflective function and caregiving representation found in this study, and points to the need for future research investigating the key hypotheses using interview methods. However, the *Insight* subscale of the SRIS shows some promise as a measurement of reflective function, and this could be explored in future studies, as it is a relatively easy instrument to administer. Finally, the descriptive data obtained in this study provided important information about expectant parents' attitudes about children and parenting, including some attitudes that have been associated with infant attachment outcomes. Many of the parents had attitudes that are associated with abusive parenting practices. These findings have several

implications for the development of prenatal education programs in Canada. Overall, this study points to the importance of providing expectant parents with information about children and parenting that would assist them to respond appropriately to their infant's needs.

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CHAPTER 5

DISCUSSION AND CONCLUSIONS

My dissertation research was motivated by my interest in the association between parents' self-understanding and their ability to adapt parenting behaviors to meet their children's developmental needs. Based on my review of the literature exploring the relationship of parents' cognitions to child development outcomes, I decided to focus my research on reflective function, a cognition of expectant parents that is significantly associated with *secure* infant attachment outcomes (Fonagy, Steele, Steele, Moran & Higgit, 1991).

My dissertation was both theoretical and applied. In Chapter 2, I have situated reflective function (i.e., the ability of parents to understand the connection between their own mental states and behaviors) in a theoretical framework that merged attachment and ecological perspectives (See Chapter 2). My model extends previous attachment theoretical models in 2 primary ways. First, my model specifies how parents' reflective function impacts infant attachment through parents' cognitions about children and parenting (i.e., caregiving representation) thereby providing a link between the work of Fonagy et al. (1991) and that of George and Solomon (1996, 1999) and Benoit, Parker, and Zeanah (1997). Second, by focusing on contextual processes associated with *secure* infant attachment, my model provides a framework for the development of parent interventions that aim to facilitate *secure* infant attachment. A large body of literature has demonstrated that *secure* infant attachment is associated with children's later social and emotional well-being,

whereas *insecure* attachment, which occurs in approximately 1 out of every 3 infants, is a risk factor for later developmental problems (for reviews see Thompson, 1999; Weinfield, Sroufe, Egeland, & Carlson, 1999). The relatively high incidence of *insecure* attachment, combined with evidence of its detrimental effects, suggests that infant attachment security is indeed an important and desirable human outcome that is worthy of continued theoretical and empirical attention.

My research was guided by hypotheses about the relationship between parents' reflective function and caregiving representation (i.e., cognitions about children and parenting) that I developed as part of the theoretical model presented in Chapter 2. I developed and evaluated a pilot reflective parenting program to examine the proposed causal relationship between reflective function and caregiving representation (i.e., cognitions about children and parenting) associated with *secure* infant attachment, and whether a low intensity intervention could influence participants' reflective function and cognitions about children and parenting. Although I had originally planned to complete multivariate analyses of the relationship between reflective function and caregiving representation with participants in the program evaluation study, only 14 couples (N=28) volunteered and this was not a sufficient number for the completion of multivariate analyses. Therefore, I implemented a second data collection process in which an additional 43 participants were recruited from regular prenatal classes to complete the set of 3 questionnaires (i.e., AAPI-2, SRIS, demographic questionnaire) administered pre-program in the evaluation study. I reported the

results of these studies in 2 different manuscripts. The first study, described in Chapter 3, examined the short-term effects of the reflective parenting enhancement to prenatal education. The second study, described in Chapter 4, used multivariate analyses to examine the relationship between 71 expectant parents' reflective function and cognitions about children and parenting. Individually, each study had implications for attachment theory and interventions. Moreover, when considered in combination, further insights and conclusions became evident to me. The individual and combined implications of the 2 studies are described below.

Implications of Study 1: Evaluation of a Pilot Reflective Parenting Enhancement to Prenatal Education

The evaluation study examined change in expectant parents' attitudes following their involvement in a 5-week reflective parenting program enhancement to prenatal education. The 2 primary activities included a reflective parenting journal, which the parents completed at home, and group discussions among the participants, which were facilitated by the researcher. Overall, the results revealed statistically significant improvements in participants' reflective function (i.e., self-reported understanding of the mental states underlying their own behaviors) and in their cognitions about children and the parenting role (i.e., appropriate expectations of children). As predicted, parents with low pre-program reflective function significantly increased the level of their reflective function. These results suggest that reflective function can be operationalized, and that this operationalization can be used as the basis for an attachment intervention.

And, as hypothesized, change in reflective function resulted in a corresponding change in attitudes about children and parenting for 5 parents, providing some evidence of a causal relationship of reflective function to caregiving representation. However, the significance of these findings is limited by the small and homogeneous sample, and by the short length of the program. Future studies could examine longer-term effects of a reflective parenting program on infant attachment outcomes for a larger, more heterogeneous sample.

Some unexpected results of the evaluation study provided additional preliminary evidence of the hypothesized causal relationship of expectant parents' reflective function on caregiving representation. Participants with high pre-program reflective function made more significant changes in post-program attitudes towards children compared to those with low pre-program reflective function. This finding suggests that reflective function precedes the ability of parents to change their attitudes toward children. The ability of parents to change their attitudes toward children is conceptually similar to *openness to change in parenting approaches,* an aspect of caregiving representation associated with *secure* infant attachment (Benoit et al., 1997). The findings from Study 1 suggest that parents with self-reported understanding of the mental states underlying their own behaviors are more likely to change their cognitions about children and parenting, as a result of a parenting intervention. Past research has indicated that the *Insight* subscale is correlated with cognitive flexibility (Grant, Franklin, & Langford, 2002), which is "*the ability to spontaneously restructure one's knowledge…in adaptive response to radically changing situational demands*"

(Spiro & Jehng, 1990, p.165). It can be argued that raising children presents adults with radical changes, and that parents' ability to spontaneously restructure their perceptions will affect their ability to adapt to their children's needs. The results of this study suggest that parents with a self-reported lack of insight into the mental states underlying their own behavior may not be able to restructure their perceptions about children and parenting. And, the finding that parents with low levels of pre-program insight exhibited a decrease in their *empathy for children's perspectives* over the 5-week program suggests that these parents might have defensive cognitive strategies, which are characteristic of the *insecure-avoidant* adult attachment category (Hesse, 1999). According to Fonagy et al. (1991, 1998) defensive cognitive strategies include denial of emotional states in self and others, and therefore could prevent parents' adaptive responses to their infant's needs.

An implication of the evaluation study for the attachment theoretical model described in Chapter 2 is that the primary effect of reflective function on infant attachment outcomes may occur through cognitive flexibility (i.e., the ability of parents to restructure their cognitions). In addition it may be that the key caregiving representation that contributes to infant attachment may be *openness to change in parenting approaches,* as identified by Benoit et al. (1997). Future research could examine the association between parents' reflective function and cognitive flexibility or *openness to change in parenting approaches* that is suggested by the results of this study. Such a study would make a significant contribution to the development of theoretical attachment models by elucidating

how parents' reflective function and caregiving representation impact infant attachment.

In addition to exploring the effectiveness of a reflective parenting enhancement, Study 1 also provided information about the feasibility of adding a reflective component to prenatal education. The low response rate for Study 1 (13%) suggests that few expectant parents were interested in participating in a reflective parenting enhancement. Participants in the enhanced program identified 2 reasons for non-completion of the written journal, which may have also influenced the response rate: the amount of time required to complete the written journal; and, the emphasis of the program on remembering childhood experiences. Five expectant parents reported they did not complete the written journals because of lack of time, and 1 expectant mother said that her childhood experiences were too painful to revisit. Some of the parents who attended the group interviews indicated that while the written journal was somewhat useful, the information provided about infant attachment and the group discussions focused on responses to infants' mental states, were the most valuable components of the program. This feedback, combined with evidence that sections of the written journals were difficult to complete for several participants, suggests that future reflective parenting programs focus on providing information about infant attachment, infant mental states, and appropriate parent responses through both written information and group discussions. A written reflective journal could be made available, but only as an option for those parents who want it. Additionally, several parents commented that the written journal was

useful as a prompt for couple discussions. Based on this feedback, future reflective enhancements could provide couples with a discussion guide to facilitate exploration of their childhood experiences and future parenting plans.

Implications of Study 2: Relationship of Parents' Reflective Function to Caregiving Representation

The second study examined the hypothesized association between reflective function and 5 specific caregiving representations of 71 expectant parents. In this study, reflective function, as measured by the SRIS *Insight* subscale, did not correlate with participants' cognitions about children and parenting including: *appropriate expectations of children, empathy for children's needs, values alternatives to corporal punishment, supports appropriate family roles, and values children's power and independence.* The lack of association may be attributed to the use of self-report questionnaires to assess reflective function and caregiving representation. Previous research has used in-depth interviews to measure these constructs (Benoit et al., 1997; Fonagy et al., 1991; George & Solomon, 1996), and it may be that the SRIS and AAPI-2 measure other constructs, or that Likert scale-based questionnaires are not adequate measures of reflective function and caregiving representation. Future studies could examine the proposed association between reflective function and caregiving representation using interview methods employed by other attachment researchers.

The lack of association between reflective function and specific attitudes toward children and parenting that was found in Study 2 also suggests that factors other than reflective function may influence parents' caregiving

representation. This is supported by Huth-Bocks et al. (2004) who found that several social contextual factors (i.e., childhood experiences, poverty, single parenthood and domestic violence) influenced the caregiving representations of expectant mothers. Future research could explore how *far distal* processes, as described in Chapter 2 (i.e., marital quality, work-family stress, family of origin experiences), interact with reflective function and caregiving representation to affect infant attachment security. Such studies could explore the mediating and moderating influences of reflective function and *far distal processes* on caregiving representation.

Additional Implications of the Research

Consideration of the combined results of Study 1 and Study 2 points to some additional implications for attachment theory and the development of parent interventions.

Implications for Attachment Theory

The results of Study 2 fail to provide evidence of a direct association between reflective function and specific caregiving representations. Alone, this study suggests that reflective function does not predict parents' caregiving representations, as I hypothesized in Chapter 2. However, Study 1 indicated that while reflective function was not related to specific cognitions about children and parenting, it predicted change in cognitions about children and parenting over a 5-week program. The implication for the attachment theoretical model depicted in Chapter 2 is that parents' insight into the mental states underlying their behaviors may be an important prerequisite of their ability to adapt to the changing needs of

their children (i.e., parents' *sensitivity*), an important determinant of infant attachment security. Combined, these findings support further investigation of the proposed relationship of parents' reflective function to *secure* infant attachment through parents' cognitions, specifically cognitive flexibility.

Implications for Parent Interventions

According to Grant et al. (2002), the *Insight* subscale is associated with the ability of participants to change their attitudes and behavior. Low *Insight* scores have been associated with resistance to change in a therapeutic intervention program, and this was also evident in the results from my own research. Study 1 provided evidence that expectant parents with low *Insight* scores are resistant to changing their negative child-rearing attitudes, even when provided with information and support to do so. Combined with the results of Study 2, which showed a relatively high incidence of low reflective function (i.e. 38%) in a population of largely middle-class Caucasian expectant parents, these findings suggest the need for programs to develop parents' reflective function prenatally. Study 1 suggests that it is possible to change the level of reflective function in expectant parents in a short-term, low intensity enhancement to prenatal education, and further studies of such enhancements are warranted. Also, the high incidence of expectant parents in Study 2 who did not support alternatives to corporal punishment (44%), and the association between maternal spanking and *insecure* infant attachment (Coyl, Roggman & Newland, 2002), suggest that information should be given to expectant parents about alternatives to corporal punishment, especially focused on children under the age of 2.

In addition to implications for the development of prenatal education, my research findings have implications for the development of other parenting interventions. In Study 1, the association between parents' reflective function and change in parents' cognitions about children and parenting (i.e., after a 5-week program) suggests that parent education and intervention programs may be more effective (i.e., create change in all participants) if they include a component to develop the *insight* of parents (i.e., understanding of the connection between their own mental states and behavior). To determine if a reflective component would be a valuable addition to parent education, future research could examine whether pre-program reflective function, as measured by the *Insight* subscale of the SRIS, predicts cognitive or behavioral change as a result of a parent education or intervention program.

Limitations of the Research

The two primary limitations of my research were: the lack of a control group for the evaluation study; and, the use of self-report instruments to measure reflective function and caregiving representation. These limitations are described in detail in this section.

In this study, the reflective parenting enhancement was a new program to develop parents' reflective function, based on the work of Fonagy et al., (1991, 1998). Therefore, I decided to conduct a pilot study in order to obtain preliminary feedback about the effects and feasibility of the program prior to conducting a full-scale investigation. The evaluation of the pilot provided important information to guide future research, which could subsequently be used to develop future

attachment-based cognitive enhancements to prenatal education. For example, comments made by some participants indicated that it may be important to focus primarily on the infant's mental states and behaviors in attachment interventions, and that reflection on family of origin experiences could be optional or embedded in other activities. Although the evaluation of the pilot provided information for the development of future cognitive programs, the lack of a comparison group limits firm conclusions about the effectiveness of the program. It cannot be concluded with complete confidence that increases in reflective function for participants with low pre-program levels were due solely to the reflective parenting enhancement and not to some other factors, such as the regular prenatal curriculum. Future studies need to use an experimental design (i.e., control group) to better determine differential effects of the prenatal program curricula and the activities used in this reflective program enhancement. This will be important before definitive conclusions about the causal relationship between reflective function and caregiving representation can be made.

The second major limitation was the use of self-report measurements to measure reflective function and caregiving representation. The differences between these instruments and the interview instruments typically used in attachment research limit the implications of this study for attachment theory. However, the finding that parents' self-reported understanding of the mental states underlying their behaviors predicted *flexibility* in their attitudes toward children and parenting suggests that high reflective function *may* predict aspects of *secure* caregiving representation. This proposed relationship could be

explored in studies using attachment interview methods. Future research could analyze pre and post-program effects of cognitive attachment-based interventions using the subscales of the AAI and caregiving representation interviews (i.e., IWMC). Additionally, my study does point to the importance of exploring alternative methods to in-depth interview methods in order to study the short-term effects of attachment-based interventions. Given the ease of use of self-report instruments such as those used in this study, attachment researchers might consider incorporating such methods into their programs of research to assess their validity and reliability as pre and post-program measures.

Strengths of the Research

The strengths of my research included: the development of a model to guide attachment interventions; the development and piloting of a community-based attachment intervention; and, the use of multiple methods to explore the research questions. These strengths are described below.

There are many accomplished theoreticians, such as Jay Belsky (1990; 1999), who have been involved in refining attachment theory over the past 30 years. Therefore, I was challenged to make an original and significant contribution to attachment theory. The major contribution of my theoretical model (See Chapter 2) is that it links 2 previously separate bodies of research, those of reflective function and caregiving representation. Also, by situating reflective function within an ecological framework, I have addressed a major criticism of attachment theory-- that it ignores important interactional and contextual influences on parent-infant attachment. Although my theoretical model provided a

foundation for my own study, I hope that it will also provide other attachment researchers with an example of how to situate determinants of attachment relative to other contextual processes that influence infant attachment outcomes. And, by focusing on infant attachment security, my model can be used as the basis for decisions by practitioners and policy makers who are interested in increasing the incidence of *secure* attachment. Although my model suggests the need for large studies that would examine the individual and combined effects of contextual factors on infant attachment, it was beyond my resources as a doctoral student to do so, and therefore I focused my research on one portion of the model. It will be important for future research on parents' reflective function, or other cognitive processes, to examine contextual influences such as those described in my model.

A second strength of my study was my partnership with a community organization, which grounded my research in practice. My background as a health professional and adult educator is practice-oriented. Therefore, I was interested in evaluating a parenting program to examine the effect of reflective function on caregiving representation. As I could find no available group programs that matched Fonagy et al.'s (1991) description of reflective function, I developed a new program, in conjunction with Dr. Berna Skrypnek, who is a chartered psychologist with a background in attachment theory and research. While the program was being developed, I sought a community partner to deliver the program. Cathy Kimak, Healthy Babies Coordinator, with Capital Health Authority in Edmonton, was very interested in being involved in the project. Her

input during the final development of the reflective program enhancement was invaluable. Although it was time consuming and sometimes onerous to work with a community organization, which necessitated an additional ethics proposal and numerous meetings, I believe the final product is richer. The enthusiasm and support of the community health nurse volunteers kept me inspired throughout the analyses and writing stages of my dissertation.

A third strength of my dissertation research was the completion of 2 studies, which when combined, make a more significant contribution to attachment theory and practice than a single study would have done. By conducting 2 studies, I had the opportunity to learn a wider variety of research skills than 1 study would have provided. I practiced program evaluation, and used multivariate analyses procedures that I had studied as part of my coursework. I conducted group interviews, which provided me with some additional experience and insights into qualitative research techniques. For example, I learned that my dual role as program facilitator and evaluator might have affected the comments made by the participants in the post-program interviews. That is, they may not have been totally forthcoming with their feedback. In future, I will avoid acting as both facilitator and evaluator. The use of multiple methods to examine the relationship between reflective function and caregiving representation clearly illustrated to me the benefits of looking at a problem from different angles. If I had conducted a correlational study alone, I would not have discovered a relationship between reflective function and *change* in parents' cognitions about children and parenting, even if my sample size had

been larger. Based on this experience, I will aim to incorporate multiple approaches in future research projects.

Final Reflections

When I began the doctoral program, I sought to understand the relationship between parents' self-understanding and their interactions with their children. This quest led me to attachment theory and research, which demonstrated a moderately strong relationship between parents' reflective function (i.e., understanding of the mental states underlying their own behavior) and infant attachment security. My review of the related literature and the results of my own research have provided me with a richer understanding of how parents' self-understanding affects their interactions with their children. The research provided some support for my clinical observations about the relationship between parents' self-understanding and their ability to adapt parenting behaviors. My study suggests that approximately one-third of parents lack insight into the mental states underlying their own behaviors, which by limiting their understanding of the mental states underlying their children's behaviors, may limit their ability to change how they interact with their child. The implication for professionals working with parents is that parents' reflective function may limit their ability to change behaviors. Therefore, it may be helpful to assess parents' reflective function prior to implementing a program, in order to ascertain whether parents may require some guidance to develop their insight into the mental states underlying their own behavior, and the behavior of their children.

With the development of my theoretical model, I learned how other contextual processes, in addition to parents' reflective function, influence parents' interaction with their children, and that future research on parenting should be guided by theoretical models that situate interactional processes within a contextual or ecological framework. The implication for the development, delivery, and evaluation of parenting interventions is the importance of considering how contextual processes affect parents' participation and learning. And, the implication for the development of policy that aims to enhance infant emotional health is that multiple approaches should be employed to effect large-scale changes. For example, to reduce the incidence of *insecure* infant attachment in the general population, governments will need to support programs that target more proximal processes, such as parents' reflective function, as well programs to ameliorate the effects of more distal risk factors, such as poverty, maternal depression and domestic violence. This ecological perspective will enhance my future work with practitioners and policy-makers involved in improving the emotional and physical well-being of children.

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Reflective Parenting:

A Workbook

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Importance of Attachment

You are expecting your first child, and you are interested in how you can help your baby be happy and healthy. Although there are several factors that impact your child's happiness and health, one factor that is especially important is your early relationship with your child. When your baby can trust you to meet his needs, he will feel loved and secure. This is referred to as secure attachment. Secure attachment is the basis for later social and emotional development.

The Emotional Life of Babies

Babies experience a wide range of emotions, including distress, fear, joy, interest, and sadness. When babies express their emotions they are giving their parents cues about what they need. Babies cannot talk, so parents observe them very carefully to understand what they are feeling. Once you understand what a baby is feeling and why they are feeling that way you can respond in a way that makes her feel better. Over time, the baby begins to trust that adults will be there when she needs them.

Temperamental Differences

There are differences among babies in how often and how intensely they feel emotions, often referred to as temperamental differences. Some babies are very sensitive to their environment and may feel pain or discomfort in response to loud noises, bright lights, or certain kinds of touch. You have probably heard of colicky babies. We now think that these babies are very sensitive to their environments and therefore may cry more, startle more often, need more comforting or less stimulation. Other babies are quieter and placid and it may be more difficult to read their emotions. Whatever your baby's temperament, you adjust your responses to her.

Responding to Your Baby

Your baby will evoke strong emotions in you. Many will be positive (like love and joy) and some will be negative (like stress and frustration). The way you respond to your child's emotions depends on your understanding of your own emotions and being able to separate them from your child's. Your ability to understand your own emotions is related to your experiences as a child growing up, and how your parents responded to you. Although your parents did the best they could to raise you, they probably learned patterns of relating to children from their parents. We pass these patterns along from generation to generation, without being conscious of their effect. Identifying patterns that you bring from your family will help you choose ways of interacting with your child.

Reflective Parenting

The reflective parenting workbook will help you identify patterns in your family for dealing with emotions. You will reflect on six emotions in total, two each week. The emotions are those believed to be important for infant attachment. Although you will be completing the workbooks individually, we encourage you to share your reflections with your partner. You may find that your partner's family had very similar or quite different approaches. You may find that your mother interacted quite differently than your father. If you do remember negative interactions from your childhood, we encourage you to try to understand why your parents acted the way they did. Try to put yourself in their shoes. Research has shown that adults who have come to an understanding of instances of abusive or insensitive parenting in their childhood are able to break the cycle. They can and do provide sensitive, responsive care to their own children.

Kudos to You!

For the first years of her life, your child is depending on you to read her signals, and to put her needs first. Your efforts to understand your childhood experiences in your own family will help you to respond sensitively to your child and to meet her needs. By engaging in a reflective process you will be giving your unborn child a great gift - a parent who is self-aware, responsive, and sensitive.

When Children Are Afraid

Newborn babies have a startle response to loud noises and sudden movements, especially to sudden falling sensations. This is thought to be an early form of fear. Fear responses become more clear and defined as the baby grows, and by the age of 9 months babies show fear by crying in response to specific events or strangers.

Your ability to recognize and respond to your child's fear is related to your own experiences of fear as a child, and your caregiver's response to you. The exercise that follows will help you understand patterns of dealing with childhood fears that existed in your family of origin.

Think back to a specific incident or time in your childhood when you were afraid. Describe the situation including your feelings, thoughts, and behaviors.

A situation when I experienced fear was:

_____

_____

_____

_____

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_____

_____

What I felt during this situation:

_____

_____

_____

_____

What I thought during this situation:

How I behaved (e.g., showed my fear):

Now describe your parents' or caregiver's response to your fear. Describe any differences in your mother or father's response.

Mother's Response:

Why do you think she responded this way in this situation?

What effect did her response have on you? How did it make you feel?

Was this the typical way your mother responded when you were afraid? Why or why not?

Father's Response:

Why do you think he responded this way in this situation?

What effect did his response have on you? How did it make you feel?

Was this the typical way your father responded when you were afraid? Why or why not?

Now that you have gained some understanding of your parents' response to your childhood fear, how do you think you will respond when your own child experiences fear?

When Children Are In Pain

When babies experience physical pain or distress they usually respond with crying. The most common source of a baby's pain and distress is hunger. Some babies feel distress when their diaper is soiled or when they are very tired. Most parents are very responsive to a baby's crying, and act immediately to take away the source of the pain or discomfort, and to comfort the child.

Your ability to recognize and respond to your child's pain is related to your own experiences of pain as a child, and your caregiver's response to you. Think back to a specific incident or time in your childhood when you were in physical pain or distress. Describe the situation including your feelings, thoughts, and behaviors.

A situation when I experienced pain was:

What I felt during this situation:

What I thought during this situation:

How I behaved (e.g., showed I was in pain):

Now describe your parents' or caregiver's response to your pain. Describe any differences in your mother or father's response.

Mother's Response:

Why do you think she responded this way in this situation?

What effect did her response have on you? How did it make you feel?

Was this the typical way your mother responded when you were in pain? Why or why not?

Father's Response:

Why do you think he responded this way in this situation?

What effect did his response have on you? How did it make you feel?

Was this the typical way your father responded when you were in pain? Why or why not?

Now that you have gained some understanding of your parents' response to your childhood pain, how do you think you will respond when your child experiences pain?

When Children Are Angry

Anger occurs when a child experiences a barrier to their desired activity. For example, if she wanted to play with a toy, but it was out of her reach, she may become angry. Very young babies, under the age of 2 months, may experience distress that is an early form of anger. For example, if they cannot reach the nipple when they are hungry, or if they are prevented from sleeping when they are very tired, babies will cry. This is an early form of anger. Your ability to recognize and respond to your child's anger is related to your own experiences of anger as a child, and your caregiver's response to you.

A situation when I experienced anger was:

What I felt during this situation:

What I thought during this situation:

How I behaved (e.g., showed my anger):

Now describe your parents' or caregiver's response to your anger. Describe any differences in your mother or father's response.

Mother's Response:

Why do you think she responded this way in this situation?

What effect did her response have on you? How did it make you feel?

Was this the typical way your mother responded when you were angry? Why or why not?

Father's Response:

Why do you think he responded this way in this situation?

What effect did his response have on you? How did it make you feel?

Was this the typical way your father responded when you were angry? Why or why not?

Now that you have gained some understanding of your parents' response to your childhood anger, how do you think you will respond when your child experiences anger?

When Children are Frustrated

Frustration is similar to anger, because it results when a child cannot reach his goal. It is different because it is usually due to his own unsuccessful attempts to reach a goal, rather than due to interference from an outside source. Your ability to recognize and respond to your child's frustration is related to your own experiences of frustration as a child, and your caregiver's response to you.

A situation when I experienced frustration was:

What I felt during this situation:

What I thought during this situation:

How I behaved (e.g., showed my frustration):

Now describe your parents' or caregiver's response to your frustration. Describe any differences in your mother or father's response.

Mother's Response:

Why do you think she responded this way in this situation?

What effect did her response have on you? How did it make you feel?

Was this the typical way your mother responded when you were frustrated? Why or why not?

Father's Response:

Why do you think he responded this way in this situation?

What effect did his response have on you? How did it make you feel?

Was this the typical way your father responded when you were frustrated? Why or why not?

Now that you have gained some understanding of your parents' response to your childhood frustration, how do you think you will respond when your own child experiences frustration?

When Children are Sad

Babies as young as two months can experience sadness when their mother or father shows them a 'still face', that is, a staring face with no emotion. Babies will respond with a slumped posture, and will try to turn away from the face. If the 'still face' continues, their distress increases and they will cry. Babies feel sad when they lose something that they liked or valued, such as their mother or father's approval. Your ability to respond to your child's sadness is affected by your understanding of your own experience of sadness. Reflect back to a situation in your childhood when you felt sad.

A situation when I experienced sadness was:

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What I felt during this situation:

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What I thought during this situation:

How I behaved (e.g., showed my sadness):

Now describe your parents' or caregiver's response to your sadness. Describe any differences in your mother or father's response.

Mother's Response:

Why do you think she responded this way in this situation?

What effect did her response have on you? How did it make you feel?

Was this the typical way your mother responded when you were sad? Why or why not?

Father's Response:

Why do you think he responded this way in this situation?

What effect did his response have on you? How did it make you feel?

Was this the typical way your father responded when you were sad? Why or why not?

Now that you have gained some understanding of your parents' response to your childhood sadness, how do you think you will respond when your own child experiences sadness?

When Children are Lonely

Loneliness is similar to sadness. By two months of age a baby has learned to associate comfort and joy with the presence of adults. The lack of adults in her immediate environment, or the withdrawal of a parent from contact with the baby (such as might happen when a mother or father is depressed) may evoke feelings of loneliness. The child might not be in any physical discomfort, but simply wants company, and attention. Very young babies show this by crying, whereas older babies may become whiny and irritated.

Your ability to respond to your child's loneliness is affected by your understanding of your own experience of loneliness. Reflect back to a situation in your childhood when you felt lonely.

A situation when I experienced loneliness was:

_____

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What I felt during this situation:

_____

_____

_____

What I thought during this situation:

How I behaved (e.g., showed my loneliness):

Now describe your parents' or caregiver's response to your loneliness. Describe any differences in your mother or father's response.

Mother's Response:

Why do you think she responded this way in this situation?

What effect did her response have on you? How did it make you feel?

Was this the typical way your mother responded when you were sad? Why or why not?

Father's Response:

Why do you think he responded this way in this situation?

What effect did his response have on you? How did it make you feel?

Was this the typical way your father responded when you were lonely? Why or why not?

Now that you have gained some understanding of your parents' response to your childhood loneliness, how do you think you will respond when your own child experiences loneliness?

Appendix A2: Group Discussion Guide

The group discussion will occur at the end of the last three classes. The nurse will facilitate each discussion using the following script.

"For the rest of tonight's class we are going to discuss your workbook entries for this week. I would like to establish some guidelines for the discussion.

- **You may choose only to listen and not to talk during this discussion.**
- **Please do not share what is said in this group discussion with others outside the group.**
- **Because we cannot guarantee confidentiality, I do not recommend that you share information of a highly personal nature. If you have some issues that you would like to discuss further, I am available after the group to talk with you. I will keep any information you share with me confidential except in cases where I am required by law to disclose.**
- **The group discussion will focus on positive strategies for dealing with the emotions of children."**

Following this introduction, the nurse facilitator will lead the discussion with this prompt: **"Let's talk about your childhood experiences of (emotion of the week). What are some things your parents did that made you feel better?" In the case of anger and frustration, the facilitator will ask the participants "What did your parents do to help you gain control?"**

The nurse will encourage the participants to share positive parenting strategies that they have experienced or, when there are no examples of positive strategies, to reflect on how their parents could have responded to make them feel better. The nurse could ask, **"How did this make you feel better? How did it make you feel more in control?"**

The nurse will encourage participants to share insights about why certain strategies helped them feel better. Explain that these strategies made them feel that their parents had truly empathized and understood their perspective.

The key to nurturing parenting is...to put yourself in your child's shoes.

Appendix A3: Nurse Training Program

1. What is the Reflective Parenting Program?

    a. Why has the program been developed? Why is my participation important?
    b. What are the goals of the program?
    c. What are the learning activities?
    d. What are the research goals?

2. What is my role in the program?

    a. Introduce and distribute Workbook.
    b. Lead Group discussion with the parents.
    c. Take notes re: questions and concerns.
    d. Support and refer participants who require follow-up with mental health professionals. Keep record of the number of referrals.
    e. Attend individual interview with researcher after the program.

3. What if I have problems or concerns?

    a. What problems or issues can we anticipate?
    b. How can we resolve these issues, and others that may arise?
    c. What kind of support do you want from the researcher?

Resource: Gowen, J.W. & Nebrig, J.B. (2002). Laying a strong foundation: The building blocks of emotional development. In J.W. Gowen & J.B. Nebrig, *Enhancing early emotional development: Guiding parents of young children, (pp.15-44)*. Toronto, Ontario: Paul H. Brooks Publishing Company.

Appendix B1: Information Sheet for Nurse Educator

Project Title: Reflective Parenting Program Study

Investigator:
Melanie Moore, MEd,
Doctoral Candidate,
Department of Human Ecology,
University of Alberta.

Supervisor:
Deanna Williamson, PhD,
Associate Professor,
Department of Human Ecology,
University of Alberta.

Introduction

Adults who have experienced secure attachment to their parents, or who have resolved childhood experiences of abusive or insensitive parenting, are better able to nurture their own children. Approximately one in every 2 or 3 adults have unresolved attachment issues that may affect their parenting. Almost 60% of Canadian parents attend prenatal education to prepare for the birth of their first child. As this may be the only formal parent education they attend, it is an unmatched opportunity to influence understanding of attachment experiences in the general population.

Purpose

The purpose of the study is to pilot a reflective program as an enhancement to a traditional prenatal group program. A doctoral student has developed the program as part of her thesis research. The goal of the reflective program is to develop parents' understanding of the emotional needs of infants and children, increase parents' awareness of patterns of responding to emotions that exist in their family of origin, and help parents choose responses that support children's emotional development.

Your Role

As the nurse educator, your involvement in the pilot study will include:

- Attend a half-day orientation with the researcher to learn how to deliver the reflective parenting program.
- Conduct a regular 5-week prenatal class with a sample of 8-10 couples, which will incorporate the reflective component. Your role will be to: introduce the reflective parenting workbook to the expectant parents (class two), conduct group discussion based on their workbook entries (classes three, four and five), and refer expectant parents to counseling resources if they need additional support.
- Participate in an interview with the researcher about the administration and content of the reflective component. We will explore the feasibility of the enhancement to the regular prenatal program. With your permission, this interview will be audio taped.

Compensation
You will be reimbursed for the additional time to deliver the enhanced prenatal program. This includes a half-day of training, three hours per evening to deliver the prenatal class (this includes an extra half-hour for the reflective component), and a 1-2 hour follow-up interview.

Benefits and Risks of Participating
The benefits of your participation in the study include the opportunity to assist parents-to-be to explore their expectations about parenting, and to develop improvements to prenatal education. This research will contribute to what we know about the prevention of insensitive parenting. Risks include stress associated with parents relating unpleasant or abusive childhood experiences. You will be provided with a list of resources to distribute to the parents. Another risk is that the enhancement might interfere with the regular prenatal program. You will receive ongoing support from the researcher to deal with any issues that may arise.

Confidentiality
Your identity will be protected throughout the study, and your name will not be mentioned in any publications or reports, unless you explicitly give permission to do so. All information will be held confidential, except when professional codes of ethics or legislation require reporting.

Withdrawal from the Study
Your participation in this study is voluntary. You may stop delivery of the reflective enhancement if the program becomes disruptive. That is, you may decide to complete the regular prenatal class, but omit the reflective group discussion, and this would not influence your current or future employment.

Use of Your Information
The feedback that you give during the interview will be used to modify the parenting program. The researcher will transcribe the interviews, and the transcribed comments will be stored for at least five years in a secure area (i.e., locked filing cabinet), in the Department of Human Ecology, at the University of Alberta. Your comments may be included in the written doctoral thesis and in papers written for publication. Your name and any other identifying information will not be included in these documents, unless you expressly ask to have your input acknowledged. The information gathered for this study may be looked at again in the future to help us answer other study questions. If so, the ethics board will first review the study to ensure the information is used ethically.

Appendix B2: Nurse Educator Consent Form

Project Title: Reflective Parenting Program Study

Investigator:
Melanie Moore, MEd,
Doctoral Candidate,
Department of Human Ecology,
University of Alberta.
Phone: 904-1713

Supervisor:
Deanna Williamson, PhD.
Associate Professor,
Department of Human Ecology,
University of Alberta.
Phone: 492-5770

Consent: *Please answer the following questions by circling yes or no.*

Have you read the description of the study?	Yes	No
Has the researcher answered your questions about the study?	Yes	No
Have you had the opportunity to review the reflective parenting workbook?	Yes	No
Do you understand your role in the study?	Yes	No
Do you understand the risks and benefits of your participation?	Yes	No
Has confidentiality been explained to you?	Yes	No
Do you understand that you can stop delivery of the reflective program enhancement, at any time, and this will not influence your employment or pay?	Yes	No
Do you agree to an audio-taped interview after the program?	Yes	No
Do you understand how your comments in the audio-taped interview will be used? That is, your comments will be used to modify the program and may appear in a doctoral thesis, research presentation or publication.	Yes	No
Do you consent to the use of your interview comments?	Yes	No

If you have any further questions about this program, you may contact Dr. Deanna Williamson @ 492-5770 or Linda Capjack, Chair, Human Ecology Department @ 492-5997. If you have any concerns about any aspect of the study, please contact the Patient Relations Department of the CHA at 407-1040.

I agree to take part in the pilot study described in the information sheet. Yes No

Signature of Nurse	Signature of Witness
Printed Name	Printed Name of Witness
Date	Researcher's Initials (Melanie Moore)

Appendix C1: Invitation Letter to Participants

Dear Parents-to-be:

Your first baby is on the way, and you are interested in how you can help your baby be happy and healthy. We are inviting you to attend a new prenatal program developed by a doctoral student at the University of Alberta. It is the same as the program you are currently registered in, but has some extra activities. The activities are designed to help mothers and fathers foster their baby's emotional and social development. If you decide to participate, it will replace the prenatal class you are currently registered in. Both mother and father should be willing to participate. There are two available dates for the program: Mondays, January 5 to February 2, 7:00 – 9 p.m. at Bonnie Doon Health Center, and Tuesdays, January 6 to February 3, 7:00 p.m.–9 p.m. at Twin Brooks Health Center.

The benefits of participating in the new program are that you will learn about the emotions of babies and how they may affect you. You will have a chance to think about how you will parent **before your child is born.** This will include writing in a reflective workbook about how you were raised, and how your childhood experiences may affect your own parenting plans. The workbooks will be used privately in your home and will take 1 to 3 hours each week to complete. Based on your workbook entries, you will be invited to share positive childhood experiences with other expectant parents during small group discussion in the last three classes. You will talk about ways you can help your child feel loved and secure. A two-hour focus group will be conducted about one week after the end of the program to get your opinions about the program. Your participation in this focus group is optional. The risks of participating in the program include possible stress arising from unpleasant childhood memories. We will provide you with ongoing support and a list of resources.

Your involvement is completely voluntary. **If you are interested in learning more about this program, please contact Melanie at 904-1713**

If possible, please respond by December 19, 2003. Thank you for your interest in the program.

Melanie Moore, MEd.
Doctoral Candidate

Deanna Williamson, PhD.,
Associate Professor

Appendix C2: Confirmation Letter

Name and Address

Dear First Name,

This letter is to confirm your participation, with your partner, in the study of an enhanced prenatal class on **(date)** at **(location)**. This class will replace the regular prenatal class that you had originally registered in. The follow-up group interview is scheduled for (date and time) in Room 336, Human Ecology Building, at the University of Alberta. I will ask you at the last class if you plan to attend the group interview. Directions to the room will be provided at that time.

Please phone me at 904-1713 if you have any further questions. I look forward to meeting you at the first prenatal class.

Sincerely yours,

Melanie Moore, MEd,
Doctoral Candidate.

Deanna Williamson, PhD.,
Associate Professor,
Project Supervisor.

Appendix C3: Parent Information Sheet

Project Title: Reflective Parenting Program

Investigator:	Supervisor:
Melanie Moore, MEd,	Deanna Williamson, PhD,
Doctoral Candidate,	Associate Professor,
Department of Human Ecology,	Department of Human Ecology,
University of Alberta.	University of Alberta.
Phone: 904-1713	Phone: 492-5770

About the Program

In this program, some activities have been added to the regular prenatal class to help you get ready to care for your baby. The program has three goals. You will learn about the emotional needs of babies. You will use a workbook to explore patterns of responding to emotions that existed in your family of origin and to understand how these patterns may affect your own parenting. You will identify and discuss parenting behaviors that will help your baby feel loved and secure. A doctoral student has developed the program as part of her thesis research.

What Will Be Required of Me?

- Attend the 2 to 2 ½ hour prenatal classes each week for five weeks.
- Complete 3-4 short questionnaires at the first and last classes. The researcher will use the questionnaires to analyze how well the reflective activities worked.
- Record your thoughts and memories about your childhood in a workbook, at home. This will take about one to three hours, for the last three weeks, spread out over the week.
- Participate in group discussion during the last three classes. Based on your workbook entries, you will identify parenting behaviors that made you feel loved as a child. You may decide only to listen during the discussion.
- Give your completed workbook to the researcher at the last class. It will be photocopied and returned to you.
- Optional: Attend a two-hour group interview to be held at the University. At this interview you will be asked about how the reflective activities worked for you. This interview will be audio taped.

Benefits of Participating

In this program you will:

- learn about the emotional development of infants and children.
- become aware of patterns of parenting in your family and how those may affect your own parenting.
- have a chance to think about how you will parent **before your child is born.**

- ☺ share your thoughts about parenting with other expectant parents, in a supportive environment.
- ☺ help us develop prenatal programs that better prepare men and women for parenting.

Risks of Participating
You may feel some stress or anxiety when you remember unpleasant or abusive childhood experiences. There may be some conflict between you and your partner about parenting issues that arise as part of the program. We have provided you with a list of resources that you can access if you want to explore some of these issues in more depth. You can access these resources during or after the program.

Withdrawal from the Study
Your participation is voluntary and you can withdraw from the program at any time and for any reason. You can decide to continue in the prenatal class, but not complete the workbook or participate in the group discussion. At some future time, if you decide to withdraw your copy of the workbook, you may contact the researcher, and she will give it back to you.

Confidentiality
Your identity will be protected throughout the program, and your name will not appear in any written reports or documents. Although we will ask everyone to not share what he or she hears in the group with others outside the group, confidentiality cannot be guaranteed. Information of a highly personal nature should be shared with the nurse only. Before the group discussion begins, the nurse will remind the group that what is said needs to remain confidential. If there is something you would not like to be discussed or known, please do not share it with the group. Any information that you share with the nurse or the researcher will be confidential except when professional codes of ethics or law require reporting. Your name will be removed from the questionnaires and copied workbooks and they will be kept in a locked cabinet, in the Department of Human Ecology, at the University of Alberta, for five years. After five years they will be destroyed.

Use of Your Information
The researcher will use your questionnaire responses and written workbook entries to analyze the effects of the workbook and group discussion. Your questionnaire responses, and written workbook entries may be included in the written thesis or in future research or papers written for publication. The information gathered for this study may be looked at again in the future to help us answer other study questions. If so, the ethics board will first review the study to ensure the information is used ethically.

Appendix C4: Parent Consent Form

Project Title: Reflective Parenting Program

Investigator:
Melanie Moore, MEd,
Doctoral Candidate,
Department of Human Ecology,
University of Alberta.
Phone: 904-1713

Supervisor:
Deanna Williamson, PhD.,
Associate Professor,
Department of Human Ecology,
University of Alberta.
Phone: 492-5770

Consent: (*Please answer the following questions by circling yes or no.)*

Have you read the description of the reflective program?	Yes	No
Has the researcher answered your questions about the program?	Yes	No
Do you understand what you will be doing in the reflective program?	Yes	No
Do you understand the risks and benefits of your participation?	Yes	No
Has confidentiality been explained to you?	Yes	No
Do you understand that you can stop taking part in this program, at any time without effect? That is, you can decide to continue in the prenatal class, but not complete the workbook, or participate in group discussion.	Yes	No
Do you understand how your questionnaire responses and written entries in the workbook will be used? That is, they may be used in the doctoral thesis or in future research or written publications.	Yes	No
Do you consent to the use of your questionnaire responses and written workbook entries?	Yes	No
Do you agree to take part in the program described on the Information sheet?	Yes	No

If you have any further questions about this program, you may contact Dr. Deanna Williamson at 492-5770 or Linda Capjack, Chair, Human Ecology Department @ 492-5997. If you have any concerns about any aspect of the study, please contact the Patient Relations Department of the CHA at 407-1040.

Signature	Signature of Witness
Printed Name	Printed Name of Witness
Date	Researcher's Initials (Melanie Moore)

Appendix C5: Audiotape Consent Form

Over the past five weeks, you attended a prenatal program with some extra activities. In this program you learned about the emotions of babies. You used a written workbook to reflect on emotions in your own family. You talked about ways to help your baby feel loved and secure. In the group interview, we want to find out how you liked these activities. We will use your comments to improve the program.

The researcher will record the comments you make in the group interview with an audiotape. The audiotape will be transcribed into written comments to be used by the researcher or her supervisor. The comments may be used in the doctoral thesis, in future research, or in written publications. Your name will not appear on any of these papers. The audiotape and the transcripts will be stored in a locked filed cabinet at the University of Alberta, separate from your consent forms. They will be destroyed after five years.

Do you understand how your comments in the interview will be used? Please circle one:

Yes No

Do you consent to the use of your comments from the group interview? Circle one.

Yes No

Do you consent to let the researcher audiotape the group interview? Please circle one.

Yes No

Any questions?? Contact Dr. Deanna Williamson @ 492-5770 or Linda Capjack, Chair, Human Ecology Department @ 492-5997. Concerns?? Contact the Patient Relations Department of the Capital Health Authority at 407-1040.

Appendix D1: Nurse Educator Interview Guide

The nurse educators will be interviewed at the end of the program using the following questions:

Please comment on the:

1. ease of use of the workbook;
2. your comfort with facilitating group discussion around attachment issues;
3. readiness of participants for the reflective program during prenatal education;
4. aspects of the program which were enjoyable; and,
5. aspects of the program that were difficult or challenging.
6. changes that you would recommend to the program.

Appendix D2: Participant Interview Guide

The mothers and fathers will be invited to a 2-hour group interview one week after the end of the enhanced prenatal program. Consent will be obtained to audiotape the session prior to commencing the interview. A round table approach will be used to obtain feedback from all participants. Before proceeding with the questions the researcher will establish some guidelines for participation, as follows:

> **"Please do not share what is said in this group interview with others outside the group.**
>
> **Because we cannot guarantee confidentiality, I do not recommend that you share information of a highly personal nature. If you have some issues that you would like to discuss further, I am available after the group to talk with you. Any information that you share with me will be held in strictest confidence."**

The questions that will be used to guide the discussion are:

1. First I would like your feedback on the two activities used: the workbook and the group discussion.

   How useful was the information in the (workbook, discussion) to you?

   In your opinion, was the length of the activity appropriate?
2. Second, I would like you to comment on the timing of the reflective activities (e.g., would they be more appropriate after your child is born, or before one becomes pregnant?).
3. Has the program changed your attitudes toward parenting or your parenting plans?
4. What has been the effect of the program on your relationship? (Probe: After using the workbook, did you talk with your partner about parenting plans?)
5. Do you think a video introducing the reflective program would have been helpful? If yes, what do you think the video should include?
6. Next, what did you like about the program?
7. What would you change about the program, and how would you change it?
8. Do you have any other comments about the program?

Appendix E1: Parent Information Sheet/Study 2

Project Title: Parenting Attitudes of Expectant Parents

Investigator:
Melanie Moore, MEd,
Doctoral Candidate,
Department of Human Ecology,
University of Alberta.
Phone:904-1713

Supervisor:
Deanna Williamson, PhD,
Associate Professor,
Department of Human Ecology,
University of Alberta.
Phone: 492-5770

About the Research
A doctoral student has developed this study as part of her dissertation research. We are collecting data about the parenting attitudes of expectant parents. This data will help us learn what additional information or skills should be included in prenatal education to help men and women prepare to parent their first child.

What Will Be Required of Me?
If you decide to be in this study, you will come a half-hour earlier to the second prenatal class. At that time you will complete 3 short questionnaires about your attitudes toward parenting, your awareness of your own emotions and behavior, and some general demographic information. It will take 20-30 minutes to complete the questionnaires and you will be done before the prenatal class begins.

Benefits of Participating
Taking part in this study will probably not have any direct benefit to you. But the researchers hope that findings from the study will assist the future development of prenatal programs.

Risks of Participating
We do not think that this study will harm you. If you have questions or feel upset when you fill out the questionnaires the researcher will talk to you more about this. And if necessary, she will help you find people or agencies to help you.

Withdrawal from the Study
Completion of the questionnaires is voluntary. You can withdraw from the study at any time and for any reason. Your participation in the prenatal class will not be affected if you do not wish to be involved.

Confidentiality
Your name will not appear in any written reports or documents. Only the researcher (PhD student) doing the study and her supervisors will be able to look at the information from the study. Your name will be removed from the questionnaires and they will be kept in a locked cabinet, in the Department of Human Ecology, at the University of Alberta, for five years. After five years they will be destroyed.

Use of Your Information
The researcher (PhD student) will use the information from this study as part of her doctoral thesis. Also, the information will be published and presented at conferences. The information gathered for this study may be looked at again in the future to help us answer other study questions. If so, the ethics board will first review the study to ensure the information is used ethically. If you wish to get a copy of a report of the study once it is finished we will mail it to you.

Appendix E2: Parent Consent Form/Study 2

Project Title: Parenting Attitudes of Expectant Parents

Investigator:	Supervisor:
Melanie Moore, MEd,	Deanna Williamson, PhD.,
Doctoral Candidate,	Associate Professor,
Department of Human Ecology,	Department of Human Ecology,
University of Alberta.	University of Alberta.
Phone: 904-1713	Phone: 492-5770

Consent: (*Please answer the following questions by circling yes or no.)*

Have you read the description of the research?	Yes	No
Has the researcher answered your questions about the research?	Yes	No
Do you understand your role in the research?	Yes	No
Do you understand the risks and benefits of your participation?	Yes	No
Has confidentiality been explained to you?	Yes	No
Do you understand that your participation is completely voluntary? That is, your enrollment in the prenatal class will not be affected if you decide not to complete the questionnaires.	Yes	No
Do you understand how your questionnaire responses will be used? That is, they will be used in the doctoral thesis, and for written publications. They may be used in future research.	Yes	No
Do you agree to complete three questionnaires?	Yes	No
Do you consent to the use of your questionnaire responses?	Yes	No

If you have any further questions about this research, you may contact Dr. Deanna Williamson at 492-5770 or Linda Capjack, Chair, Human Ecology Department @ 492-5997. If you have any concerns about any aspect of the study, please contact the Patient Relations Department of the CHA at 407-1040.

Signature	Signature of Witness
Printed Name	Printed Name of Witness
Date	Researcher's Initials (Melanie Moore)

Copy of the Report:

Would you like to receive a summary of the findings? Yes No

If you would like a copy, please write down a mailing address where we can send this to you. Your address will not be used for any other reason than to send this report.

Apt. #:_____Street Address:_____

Town/City:_____Province:_____

Postal Code:_____

Appendix F1: Resource List

The reflective program may raise some issues for you or your partner. You might want to talk to a professional therapist individually or as a couple. Here is a list of resources that you can access during or after the program.

24-Hour Support Lines

LINK (408-LINK) Registered nurses are available 24 hours 7 days a week for you to call about any issues related to your pregnancy, childbirth, or parenting concerns.

CRISIS LINE (482-0222) This 24-hour service connects you with mental health professionals who will talk with you about urgent issues and concerns.

DISTRESS LINE (482-4357) This 24-hour call-in service also provides referral to other community resources through the Support Network.

Walk-in Clinics

UNIVERSITY OF ALBERTA HOSPITAL (407-6501) Provides drop-in outpatient psychiatric services between 8:30 – 4:00 p.m. (Note: Staff recommends that you phone first.)

Location: University of Alberta Hospital, 114 Street and 86 Avenue.

SUPPORT NETWORK (482-0198) Provides free counseling for up to 3 sessions on a drop-in basis. (Note: Staff recommends that you phone first.)

Location: #301, 11456- Jasper Avenue

Hours: MTW 1-8 p.m. Thursday 9-4 p.m. Not open Fridays.

Community Agencies

EDMONTON MENTAL HEALTH SERVICES (427-4444)
Provides referrals to professional therapists. All services covered by Alberta Health Care. The average wait time is 2 to 3 weeks between initial contact and your first appointment.

THE SUPPORT NETWORK (482-4635) Provides an information and referral service. They keep an up-to-date list of community mental health resources.

CATHOLIC SOCIAL SERVICES (420-1970) Provides personal counseling at a sliding scale fee. An appointment with a qualified therapist can be scheduled within 5-10 working days for daytime appointments. Weekend and evening appointments may take longer.

THE FAMILY CENTER (424-5580) Provides personal counseling at sliding scale fee and also provides workshops for survivors of abuse to aid in coping with the aftermath. An appointment with a qualified therapist can be scheduled within 5-10 working days.

Private Agencies

There are several private agencies in the Edmonton area that provide individual counseling services. In most cases, you will be able to schedule an appointment within a few days. Your employer may offer a benefits program (i.e. Employee Assistance Program) to assist with payment for individual counseling services. We recommend that you obtain information about your benefits package before contacting private agencies.

Check the yellow pages in the telephone book under 'Counseling Services' for information about agencies in your community.

Appendix G1: Reflective Parenting Questionnaire

Name:_____ **Date:**_____

Before you participated in the reflective program, how well did you understand (circle one):

Infant emotions?	Not at all	Minimally	Moderately	Very well
Infant attachment?	Not at all	Minimally	Moderately	Very well

Before the reflective program, how well did you understand:

The emotions you experienced as a child?	Not at all	Minimally	Moderately	Very well
Your parents' or caregivers' emotions during your childhood?	Not at all	Minimally	Moderately	Very well
How emotions can affect parents' behavior toward their children?	Not at all	Minimally	Moderately	Very well

After you participated in the reflective program, how well did you understand:

Infant emotions?	Not at all	Minimally	Moderately	Very well
Infant attachment?	Not at all	Minimally	Moderately	Very well

After the reflective program, how well did you understand:

The emotions you experienced as a child?	Not at all	Minimally	Moderately	Very well
Your parents' or caregivers' emotions during your childhood?	Not at all	Minimally	Moderately	Very well
How emotions can affect parents' behavior toward their children?	Not at all	Minimally	Moderately	Very well

Appendix G2: Demographic Questionnaire

Background Information

Name:_____

Date:_____

Sex (circle one): Male Female

Age: _____ years

Race (circle one): White Black Asian First Nations Other_____

Highest level of education completed (check one):

High school or less __

Some post-secondary completed (e.g., partial certificate, diploma or degree program) __

Post-secondary degree or certificate obtained __

Bachelor's degree __ Professional or Graduate degree __

Other_____

What is your employment status? (Check all that apply):

Full-time homemaker ___ Work Part-time ___ Work Full-time ___

Student Part-time ___ Student Full-Time ___ Unemployed ___

Other _____

What is the level of your annual household income? (Please check one):

0-$30,000 ____ $30,000-60,000 ____ >$60,000 ____

Appendix G3: SRIS

Self-reflection and Insight Scale

Please read the following questions and circle the response that indicates the degree to which you agree or disagree with each of the statements. Try to be accurate, but work quite quickly. Do not spend too much time on any question

THERE ARE NO "WRONG" OR "RIGHT" ANSWERS – ONLY YOUR OWN PERSPECTIVE

BE SURE TO ANSWER EVERY QUESTION ONLY CIRCLE ONE ANSWER FOR EACH QUESTION

1. I don't often think about my thoughts	Disagree Strongly 1	Disagree 2	Disagree Slightly 3	Agree Slightly 4	Agree 5	Agree Strongly 6
2. I am not really interested in analyzing my behaviour	Disagree Strongly 1	Disagree 2	Disagree Slightly 3	Agree Slightly 4	Agree 5	Agree Strongly 6
3. I am usually aware of my thoughts	Disagree Strongly 1	Disagree 2	Disagree Slightly 3	Agree Slightly 4	Agree 5	Agree Strongly 6
4. I'm often confused about the way that I really feel about things	Disagree Strongly 1	Disagree 2	Disagree Slightly 3	Agree Slightly 4	Agree 5	Agree Strongly 6
5. It is important for me to evaluate the things that I do	Disagree Strongly 1	Disagree 2	Disagree Slightly 3	Agree Slightly 4	Agree 5	Agree Strongly 6
6. I usually have a very clear idea about why I've behaved in a certain way	Disagree Strongly 1	Disagree 2	Disagree Slightly 3	Agree Slightly 4	Agree 5	Agree Strongly 6
7. I am very interested in examining what I think about	Disagree Strongly 1	Disagree 2	Disagree Slightly 3	Agree Slightly 4	Agree 5	Agree Strongly 6
8. I rarely spend time in self-reflection	Disagree Strongly 1	Disagree 2	Disagree Slightly 3	Agree Slightly 4	Agree 5	Agree Strongly 6
9. I'm often aware that I'm having a feeling, but I often don't quite know what it is	Disagree Strongly 1	Disagree 2	Disagree Slightly 3	Agree Slightly 4	Agree 5	Agree Strongly 6
10. I frequently examine my feelings	Disagree Strongly 1	Disagree 2	Disagree Slightly 3	Agree Slightly 4	Agree 5	Agree Strongly 6
11. My behaviour often puzzles me	Disagree Strongly 1	Disagree 2	Disagree Slightly 3	Agree Slightly 4	Agree 5	Agree Strongly 6
12. It is important to me to try to understand what my feelings mean	Disagree Strongly 1	Disagree 2	Disagree Slightly 3	Agree Slightly 4	Agree 5	Agree Strongly 6
13. I don't really think about why I behave in the way that I do	Disagree Strongly 1	Disagree 2	Disagree Slightly 3	Agree Slightly 4	Agree 5	Agree Strongly 6
14. Thinking about my thoughts makes me more confused	Disagree Strongly 1	Disagree 2	Disagree Slightly 3	Agree Slightly 4	Agree 5	Agree Strongly 6
15. I have a definite need to understand the way that my mind works	Disagree Strongly 1	Disagree 2	Disagree Slightly 3	Agree Slightly 4	Agree 5	Agree Strongly 6
16. I frequently take time to reflect on my thoughts	Disagree Strongly 1	Disagree 2	Disagree Slightly 3	Agree Slightly 4	Agree 5	Agree Strongly 6
17. Often I find it difficult to make sense of the way I feel about things	Disagree Strongly 1	Disagree 2	Disagree Slightly 3	Agree Slightly 4	Agree 5	Agree Strongly 6
18. It is important to me to be able to understand how my thoughts arise	Disagree Strongly 1	Disagree 2	Disagree Slightly 3	Agree Slightly 4	Agree 5	Agree Strongly 6
19. I often think about the way I feel about things	Disagree Strongly 1	Disagree 2	Disagree Slightly 3	Agree Slightly 4	Agree 5	Agree Strongly 6
20. I usually know why I feel the way I do	Disagree Strongly 1	Disagree 2	Disagree Slightly 3	Agree Slightly 4	Agree 5	Agree Strongly 6